PREDICTING PUBLIC MANAGERS'

READINESS FOR CONTRACTING OF PROFESSIONAL SERVICES

IN A CHANGING STATE GOVERNMENT AGENCY

A Dissertation
Presented to
The Academic Faculty

by

Dara Veronica O'Neil

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy in Public Policy

Georgia Institute of Technology

August 2007

PREDICTING PUBLIC MANAGERS'

READINESS FOR CONTRACTING OF PROFESSIONAL SERVICES

IN A CHANGING STATE GOVERNMENT AGENCY

Approved by:

Dr. Gordon Kingsley, Advisor
School of Public Policy
Georgia Institute of Technology

Dr. Hans Klein
School of Public Policy
Georgia Institute of Technology

Dr. Barry Bozeman
School of Public and International Affairs
University of Georgia

Dr. Michael Meyer
School of Civil and Environmental Engineering
Georgia Institute of Technology

Dr. Diana Hicks
School of Public Policy
Georgia Institute of Technology

Date Approved: May 29, 2007

ACKNOWLEDGEMENTS

The writing of my dissertation taught me a lot about myself, but also about the importance of the support of my colleagues, friends, and family. First, I would like to thank my family. My parents – Dr. Dan and Betty O'Neil – have supported me throughout my education and tirelessly encouraged me as I completed my dissertation. My sister – Dr. Eliesh Lane – provided countless hours of advice and was always there to hear me out when needed. I met my now husband – Kyle Knight – while completing my dissertation and his humorous insights into the process always helped me keep things in perspective.

Second, I would like to thank my tireless dissertation Chair – Dr. Gordon Kingsley. He continually encouraged and challenged me to take my research one step further. I would also like to thank my committee members – Drs. Barry Bozeman, Diana Hicks, Hans Klein, and Michael Meyer – who generously gave their time and expertise to help improve my dissertation. Further, I would like to thank other faculty within the School of Public Policy – Drs. Paul Baker, Richard Barke, Ann Bostrom, Susan Cozzens, and Helena Mitchell – for their ongoing support and encouragement throughout the dissertation process.

Further, I am indebted to the Georgia Tech Research Institute (GTRI) with which I was employed during the writing of my dissertation. GTRI provided me with generous financial assistance, flexibility with my work, and encouragement during my entire graduate career and I am extremely grateful for this. Finally, I appreciate the willingness of the employees of the Georgia Department of Transportation to share their experiences with contracting by participating in the survey research upon which this dissertation is based.

TABLE OF CONTENTS

Acknowledgements iii

List of Tables viii

List of Figures x

Abbreviations xiii

Summary xiv

Chapter 1: Introduction and Overview 1

- Introduction 1
- Background and Policy Context 3
- Significance of the Research Approach 6
- Research Problem and Research Questions 14
- Organization of the Dissertation 15

Chapter 2: Literature Review and Hypotheses 16

- Introduction 16
- Organizational Change and the Individual 16
- Development of a Readiness for Contracting Construct 21
- Factors Affecting an Individual's Readiness for Contracting 36
- Conceptual Model 55
- Assumptions and Implications of the Literature 57
- Summary 58

Chapter 3: The Georgia Department of Transportation 59

Introduction 59

Contracting in State Government 59

Increase in Contracting Out of Professional Services 60

Consulting Contract with the Georgia Department of Transportation 61

GDOT's Increase in Consultant Use 64

GDOT's Buffering Attempts 67

Transforming Jobs 70

Contract Management Capacity at the Individual Level 75

Summary 76

Chapter 4: Research Methodology and Data Analysis Plan 77

Overview 77

Sample Description 77

Project Manager Survey 78

Measurement of Variables 85

Data Descriptive Statistics 103

Data Analysis Plan 106

IRB Approval 107

Summary 108

Chapter 5: Data Analysis Results 109

Introduction 109

Crosstabulation Analysis 109

Bivariate Correlation Analysis 110

Multiple Regression Analysis 113

Research Questions and Hypotheses Results 130

Summary of the Findings 144

Chapter 6: Implications and Conclusions 146

Introduction 146

Conclusions about the Research Questions 146

Implications for Theory 148

Implications for Policy and Practice 155

Limitations of the Research 157

Suggestions for Further Research 159

Epilogue 162

Appendix A: Normality of the Data 163

Appendix B: Data Scatterplots 174

Appendix C: Cross-Tabulations 179

Appendix D: Assumptions of Ordinary Least Squares Regression 185

Appendix E: Survey Introduction Letter 195

Appendix F: Georgia Department of Transportation Survey 197

Appendix G: Survey Reminder Post Card 214

Appendix H: Survey Codebook _____ 217

References_____ 270

Vita _____ 296

LIST OF TABLES

Table 1: Constructs for Individual Responses to Organizational Change ____ 18

Table 2: Competing Arguments For and Against Government Contracting ____ 29

Table 3: Predictors of Employee Readiness for Organizational Change ____ 38

Table 4: GDOT Survey Timeline ____ 80

Table 5: Survey Respondents' Demographics ____ 82

Table 6: Survey Respondents' Roles in GDOT ____ 84

Table 7: Respondents' Location and Percentage of Projects that Use Consultants ____ 84

Table 8: Dependent Variable – Readiness for Contracting ____ 88

Table 9: Independent Variables ____ 93

Table 10: Control Variables ____ 100

Table 11: Descriptive Statistics ____ 105

Table 12: Bivariate Correlation Coefficients ____ 111

Table 13: Results of Multiple Regression for Readiness for Contracting Model ____ 116

Table 14: Coefficients of Determination for Readiness for Contracting Model ____ 119

Table 15: Results of Multiple Regression for the First Dimension ____ 121

Table 16: Coefficients of Determination for the First Dimension ____ 124

Table 17: Results of Multiple Regression for the Second Dimension ____ 126

Table 18: Coefficients of Determination for the Second Dimension ____ 129

Table 19: Significant Relationships of Independent Variables with Readiness for Contracting ____ 131

Table 20: Crosstabulations for Personal Impact and Readiness for Contracting ____ 180

Table 21: Crosstabulations for Job Satisfaction and Readiness for Contracting ____ 180

Table 22: Crosstabulations for Job Security and Readiness for Contracting ____ 180

Table 23: Crosstabulations for Position and Readiness for Contracting 181

Table 24: Crosstabulations for Tenure and Readiness for Contracting 181

Table 25: Crosstabulations for Public Service Motivation and Readiness for Contracting 181

Table 26: Crosstabulations for Information about Contracting Out and Readiness for Contracting 182

Table 27: Crosstabulations for Participation in the Decision-Making Process and Readiness for Contracting 182

Table 28: Crosstabulations for Previous Experiences with Contracting Out and Readiness for Contracting 182

Table 29: Crosstabulations for Contracting Self-Efficacy and Readiness for Contracting 183

Table 30: Crosstabulations for Management Support and Readiness for Contracting 183

Table 31: Multicollinearity Diagnostics 187

LIST OF FIGURES

Figure 1: Conceptual Framework 56

Figure 2: Georgia Department of Transportation Organizational Chart with Units Interviewed Highlighted 63

Figure 3: Total Amount GDOT Paid to Consultants by Year 65

Figure 4: GDOT 25-Step Contracting Process 69

Figure 5: Revised Conceptual Framework 151

Figure 6: Distribution of Readiness for Contracting 164

Figure 7: Distribution of Personal Impact 164

Figure 8: Distribution of Job Satisfaction 164

Figure 9: Distribution of Job Security 165

Figure 10: Distribution of Position 165

Figure 11: Distribution of Tenure 165

Figure 12: Distribution of Public Service Motivation 166

Figure 13: Distribution of Information about Contracting 166

Figure 14: Distribution of Participation in the Decision-Making Process 166

Figure 15: Distribution of Previous Experiences with Contracting 167

Figure 16: Distribution of Contracting Self-Efficacy 167

Figure 17: Distribution of Management Support 167

Figure 18: Normal Q-Q Plot of Readiness for Contracting 169

Figure 19: Normal Q-Q Plot of Personal Impact 169

Figure 20: Normal Q-Q Plot of Job Satisfaction 169

Figure 21: Normal Q-Q Plot of Job Security 170

Figure 22: Normal Q-Q Plot of Position 170

Figure 23: Normal Q-Q Plot of Tenure 170

Figure 24: Normal Q-Q Plot of Public Service Motivation 171

Figure 25: Normal Q-Q Plot of Information about Contracting 171

Figure 26: Normal Q-Q Plot of Participation in the Decision-Making Process 171

Figure 27: Normal Q-Q Plot of Previous Experiences with Contracting 172

Figure 28: Normal Q-Q Plot of Contracting Self-Efficacy 172

Figure 29: Normal Q-Q Plot of Management Support 172

Figure 30: Scatterplot of Personal Impact and Readiness for Contracting 175

Figure 31: Scatterplot of Job Satisfaction and Readiness for Contracting 175

Figure 32: Scatterplot of Job Security and Readiness for Contracting 175

Figure 33: Scatterplot of Position and Readiness for Contracting 176

Figure 34: Scatterplot of Tenure and Readiness for Contracting 176

Figure 35: Scatterplot of Public Service Motivation and Readiness for Contracting 176

Figure 36: Scatterplot of Information about Contracting Out and Readiness for Contracting 177

Figure 37: Scatterplot of Participation in the Decision-Making Process and Readiness for Contracting 177

Figure 38: Scatterplot of Previous Experiences with Contracting Out and Readiness for Contracting 177

Figure 39: Scatterplot of Contracting Self-Efficacy and Readiness for Contracting 178

Figure 40: Scatterplot of Management Support and Readiness for Contracting 178

Figure 41: Residuals for Readiness for Contracting 189

Figure 42: Scatterplot of Partial Residuals for Personal Impact and Readiness for Contracting 191

Figure 43: Scatterplot of Partial Residuals for Job Satisfaction and Readiness for Contracting 191

Figure 44: Scatterplot of Partial Residuals for Job Security and Readiness for Contracting 191

Figure 45: Scatterplot of Partial Residuals for Position and Readiness for Contracting 192

Figure 46: Scatterplot of Partial Residuals for Tenure and Readiness for Contracting 192

Figure 47: Scatterplot of Partial Residuals for Public Service Motivation and Readiness for Contracting 192

Figure 48: Scatterplot of Partial Residuals for Information about Contracting and Readiness for Contracting 193

Figure 49: Scatterplot of Partial Residuals for Participation in the Decision-Making Process and Readiness for Contracting 193

Figure 50: Scatterplot of Partial Residuals for Previous Experiences with Contracting and Readiness for Contracting 193

Figure 51: Scatterplot of Partial Residuals for Contracting Self-Efficacy and Readiness for Contracting 194

Figure 52: Scatterplot of Partial Residuals for Management Support and Readiness for Contracting 194

ABBREVIATIONS

DOT: Department of Transportation

FAR: Federal Acquisition Regulations

GDOT: Georgia Department of Transportation

IRB: Institutional Review Board

OCD: Office of Consultant Design

SUMMARY

The extent of work being contracted out in government and the type of work being contracted out is growing in magnitude. Government agencies wrestle with the effect this has on government operations as the daily work of many government employees is changing from that of actually conducting government work to overseeing government contractors who are now providing goods and services for government. In effect, many government employees are becoming contract managers. However, most studies of government contracting sidestep or ignore the role of individual employees in ensuring the success of contractual relationships with the private sector.

Scholars in public policy are calling attention to the need to look at theories from organizational change research and apply them to the context of changing government organizations. Furthermore, organizational change theorists stress the importance of studying individuals within organizations that are undergoing transformations. Heeding this advice, this dissertation research uses the theory of readiness for organizational change from organizational change literature to develop a readiness for contracting construct to study how individual government employees respond to increasing contracting out in government. The readiness for contracting construct builds on current debates about government contracting by encompassing perceptions on the extent to which government contracting is needed and the concept of management capacity as two dimensions of the readiness for contracting construct.

This study explores the relationship between readiness for contracting in the context of contracting out in government and 11 career path, involvement, and competence factors identified in the literature that may influence an individual's readiness. The results of multiple regression analysis show that an individual's readiness for contracting is positively predicted by an individual's perceptions of personal impact, information about contracting out, and management support. Results of this research support the need for more attention to be given to individual

government employees in the context of government contracting from both a theoretical and pragmatic perspective.

CHAPTER 1:
INTRODUCTION AND OVERVIEW

Introduction

Consider Bob. Bob is a career public servant, having worked at the same state transportation agency since he graduated with his civil engineering degree 26 years ago. He has climbed through the ranks at the agency and is now responsible for managing a group of five bridge designers. When Bob started work at the agency in 1981, he was recognized as an expert among his peers and they would often come to him for technical advice for their design projects. Now it seems that Bob is disgruntled. The agency is increasingly contracting out bridge design work to outside consulting firms and Bob believes his role within the agency has become that of a paper pusher. He believes he spends an inordinate amount of time having outside consultants revise their plans as they do not comply with the agency's standard rules for plan submittal. With every new consultant hired to work on a bridge design, he knows that he will likely be spending many hours showing them how the agency does its work. Bob is frustrated for two reasons. First, he wants to design bridges like he used to when he started work at the agency, rather than making sure the paperwork of consultants is filled out properly as he spends his days now. Second, Bob feels as though the agency is a mess when it comes to working with consultants. Why should he have to teach every new consultant how to do the agency's work? Shouldn't there be some sort of procedures in place for consultants to follow? Bob's lack of enthusiasm for working with consultants bleeds over into his daily work as his hostility toward consultants does not go unnoted. Whereas five years ago he would never have considered it, he now begins to think about early retirement.

One of Bob's design engineers is a new civil engineering college graduate. Sue received top honors at her university and received numerous job offers from prestigious firms yet she chose to work at the state department of transportation to see how work really gets done in

building public infrastructure. Sue works for Bob in designing bridges. Only she is finding that the agency does not really design bridges – instead private firms are hired to do that work. Sue at first was frustrated by this finding. She has since come to the conclusion that this really works better for the state since the funds allocated to the agency by the state legislature do not provide nearly enough for Bob's bridge design division to maintain expertise in cutting-edge design software. However, the private sector with whom she interacts seems to have access to all of the latest resources. She decides that contracting out bridge design work is probably the right thing for the agency to do. Further, the agency seems to have adopted contracting out as standard operating procedure for the past few years and seems to have the internal capacities to streamline the contracting process. Sue is comfortable in her position of interacting with outside consultants and overseeing their work in designing bridges for the state.

What's going on here? Bob has years of experience at the state department of transportation and is highly frustrated with the agency's thrust toward contracting out bridge design work. Sue, a newcomer to the agency, sees contracting out design work as standard operating procedure for the agency and is content in her new job. Both public servants work at the same agency yet have vastly different impressions of the agency's interactions with engineering design consultants. Sue readily accepts the change the organization is going through in increasing contracting out work while Bob is frustrated and is considering early retirement. **What explains this difference in employees' readiness to accept changes in government organizations?**

This scenario is not unlike that faced by numerous government agencies across the United States. Departments of Transportation are united with other government agencies facing similar issues with the management of government contracts. However, one thing is certain: When the activities of an agency shift from being performed by government to being performed by the private sector, government must maintain public accountability for those funds. Effective management of contracts is central to this accountability.

Background and Policy Context

According to data for fiscal year 1999, the direct provision of goods or services by government bureaucrats accounts for only five percent of the activity of the U.S. federal government excluding monies allocated to defense (Salamon, 2002). By some estimates, 50 percent of all U.S. taxpayer money goes to private contractors (Sclar, 2000). This is in part due to the 1998 Federal Activities Inventory Reform (FAIR) Act which requires federal agencies to compile annual lists of all functions that are "commercial in nature." For fiscal year 2002, the U.S. Office of Management and Budget ordered agencies to directly outsource or conduct public-private competitions for at least five percent of the jobs on the lists.

Reliance on the private sector may be growing in magnitude, but it is certainly not new for the U.S. government (Finley, 1989; Fisk et al., 1978; Pack, 1987). Kettl shows how "every major policy initiative launched by the federal government since World War II—including Medicare and Medicaid, environmental cleanup and restoration, anti-poverty programs and job training, interstate highways and sewage treatment plants—has been managed through public-private partnerships" (Kettl, 1993b, p. 4). Some have even traced the use of contracting out to the 16th century in which Queen Elizabeth came to increasingly rely on the private sector for naval warfare during England's growing conflict with Spain (Kent, 1998) and in the U.S., since the beginning of the Republic (Nagle, 1992).

The notion of contracting out government services gained popularity in the 1960s and 1970s during the Vietnam and Watergate years. The Public Assistance Amendments of 1962 and 1967 and the Economic Opportunity Act of 1964 promoted the use of contracting with the private sector (Van Slyke, 2003). And in 1968, the Brookings Institution published *Government Contracting and Technological Change* which promotes government contracting for research and development as well as standard goods and services (Danhof, 1968). By the 1980s when Reagan was elected, he encouraged contracting out by saying that "government isn't the solution to our problems. Government is our problem" (Sclar, 2000). By executive order, Reagan established the

President’s Commission on Privatization whose mandate was to identify areas in the federal government that could be privatized (President's Commission on Privatization, 1988). Trends in public administration and management continue to call for government agencies to exhibit many features of the private sector (Leadbetter, 1997; 2000).

Consequently, many federal, state, and local government agencies are increasingly contracting out services to the private sector. Some are willingly doing so because they are finding that they do not possess the skills or tools necessary to complete the job in-house or they simply find it more efficient to outsource the work. Other agencies are contracting out because it is mandated by legislatures, governors, and the like. Whatever the reason for the increase in contracting out, studies indicate that while some government agencies embrace and excel at contracting (Bennett and Johnson, 1981; Domberger and Jensen, 1997; Osborne and Gaebler, 1992), other agencies are ill-prepared to effectively manage this changed way of conducting the government’s business (Kettl, 1993a; Sclar, 2000). Some argue that contracts are being incompetently administered by both individual employees and by the organization due to a lack of skills (e.g., Andrew, 1999; U.S. Government Accountability Office, 2005a), management capacity (e.g., Brown and Potoski, 2006; Choi and Heinrich, 2004; Van Slyke, 2003), or strategic planning (e.g., Romzek and Johnston, 2002; Hefetz and Warner, 2004).

Contracting out represents a distinct way of conducting government work that differs from that of in-house service production and delivery. Contracting is a process that is typically viewed in a series of phases. Brown and Potoski (2003) present a model of contracting that includes three phases: 1) a feasibility phase in which government determines whether a particular service is appropriate for contracting and whether vendors exist from which to purchase the service; 2) an implementation phase in which government implements the contracting process by bidding the contract, assessing and selecting a vendor, and negotiating and structuring contract terms; and 3) an evaluation phase in which government evaluates vendor performance to determine whether the vendor has fulfilled contractual obligations (Brown and Potoski, 2003).

Now instead of government employees doing the actual work, public employees' responsibilities have shifted to oversight of those conducting the work outside of the organization. This represents a change in how the agency operates as a whole as well as a change in individual employees' daily tasks.

According to Savas (2000), contracting out increases the need for well-educated public managers and reduces the need for low-skilled public employees. However, government managers typically lack experience in the skills needed for successful contracting such as personnel management, purchasing, and performance measurement (Savas, 2000). The National Academy of Public Management has also recognized the changing roles of public managers in an era of increasing contracting out:

> *"the skills needed by public managers and their contracting staff today, such as negotiating and using creative incentives to achieve results from parties not under their direct control, are considerably different from, and in some cases contrary to, those formerly deemed crucial by classical public-administration theorists. Due to the difficulties involved with inducing private entities to act in a manner consistent with public objectives, current program managers need assistance in adjusting to their new roles as arrangers and administrators instead of doers. Equally important is that future public managers learn different techniques and approaches to accomplish the government's business effectively"*(National Academy of Public Management, 1989).

Employees trained in specialized fields (e.g., engineering, social welfare, healthcare) are being called upon to manage contracts with the private sector (Romzek and Johnston, 2002). Some employees may resist this shift in their career while others may embrace it. Some may be hesitant to change old ways of doing work. They may think the new way is not needed, not effective, or that this is just another change the agency is trying to implement that likely will not be successful (Kakabadse and Kakabadse, 2001). Understanding what contributes to these employee perceptions may yield information that can be used to make contracting out more effective for government.

Despite the importance of individual employees in managing government contracts, most of the literature on government contracting is targeted towards public managers in the form of

"how-to" guides (Ferris and Graddy, 1988; Kelman, 2002; Lavery, 1999; Salamon, 1989; Wise, 1990), rather than providing guidelines for human resources and agency management in preparing their employees for their new roles in the agency. For example, the International City Management Association developed a guide for local government managers and their staffs who are establishing, expanding, or refining service contracting programs. The guide provides an overview of management issues in service contracting from planning the bid process, to evaluating bid responses and monitoring contractor performance (Harney, 1992). Similarly, Katz (1991) provides a set of guidelines for governments considering contracting to ensure a smooth process (Katz, 1991). There are other practitioner publications on:

- selecting appropriate contracting out methods (Allen et al., 1989; Keating, 1999; Savas, 1987; Domberger, 1998)
- the administration of government contracts (Cibinic and Nash, 1995; Clark, 1995; O'Leary, 1996; Macmanus, 1992a; Rehfuss, 1989; Rehfuss, 1979)
- international best practice guidelines and case studies (Organization for Economic Cooperation and Development, 1998) including in Australian (Rimmer, 1998) and Canadian government (Panet and Trebilcock, 1998)
- field specific such as in the social services (Kramer and Grossman, 1987; Peat and Costley, 2001), mental health care (Schlesinger et al., 1986), welfare programs (Smith and Lipsky, 1993), and in weapon system repair (Keating, 1999).

These guides do not provide information that is useful in better preparing government employees for contracting out the government's work. Instead they focus on contracting at an organizational level, not an individual level.

Significance of the Research Approach

This research makes a distinctive contribution to the field of public policy in three ways. First, it uses organizational change literature to examine change resulting from increasing contracting out in a government agency. Second, it analyzes individual government managers who are responsible for implementing contracting out, rather than studying the broader

organizational aspects of contracting out. Third, this research examines the contracting out of professional services – a topic that has not received much attention in the public policy literature to date. Each of these contributions is explained below.

Use of organizational change literature

First, research on organizational change details processes and suggests ways for making change as smooth a transition as possible for organizations and their employees. Yet as Fernandez and Rainey (2006) point out, studies on change in government agencies are rarely explicitly addressed in public administration literature despite a massive number of articles published in the organizational change literature. For example, Van de Ven and Poole conducted a literature review on articles related to organizational change and found more than one million articles in 1995 (Van de Ven and Poole, 1995). The number of articles has grown from this count over 12 years ago. Correspondingly, it appears that little research and theory published in this area is picked up by public policy researchers for use in understanding organizational changes, specifically those taking place within the public sector due to an increasing emphasis on contracting out government work. Fernandez and Rainey (2006) state that researchers on public organizations should look to this body of literature for testable propositions and theories, especially given the rash of articles in public administration dealing with government reform. Public policy scholars and practitioners can augment their knowledge base on changing government agencies by drawing from ongoing research conducted by organizational change theorists.

Correspondingly, prior research on contracting out in the public management field has focused on a variety of issues, but nowhere does the literature seem to discuss organizational changes using theories from the organizational change literature. Prior discussions in the public management literature have focused on whether to contract out (e.g., concerns about inherently governmental functions (U.S. General Accounting Office, 1991)), to questions of how to

effectively contract with the private sector (Romzek and Johnston, 2002; Ferris and Graddy, 1986; Florestano and Gordon, 1980; Globerman and Vining, 1996), and more recently, to questions surrounding the capacity of government to effectively manage its business relationships with contractors (Brown and Potoski, 2003, 2006; Choi and Heinrich, 2004; Van Slyke and Hammonds, 2003a; Van Slyke, 2003). These studies do not use theories from the organizational change literature to examine contracting out.

Despite this gap, public policy research on contracting should be cognizant of an important insight from organizational change research. Change theorists assert that organizational change is always mediated through individual changes (Mann, 1957; Likert, 1967; Schein, 1980; Edmondson and Woolley, 1999; Kets de Vries and Balazs, 1998). Not all individuals will react the same to a single organizational change. The individual differences theory from psychology argues that the responses of one individual may diverge from that of another because of differing cognitive structures. As such, specific individuals may react differently to the same change situation (Armenakis et al., 1993; Huy, 1999; Rafferty and Simons, 2006). We would expect individual public servants to also react differently to changing government work due to increasing contracting out. This leads to the second contribution of this research – studying individual government employees who are undergoing changes as a result of increasing contracting out.

Study of individual government employees

As organizational change theory explains, employees must be committed to a change if it is to be successfully implemented. “The people in organizations can be either the key to achieving effective change, or the biggest obstacles to success” (Smith, 2005, p. 408). Few organizational changes can be mandated from the top and put into place without the need for much acceptance from employees (Reichers et al., 1997). One of the fundamental reasons why effective organizational change is so difficult to achieve is this individual nature of change. Many change efforts fail because they underestimate the importance of the individual nature of organizational

change (Devos, 2003; Jaffe et al., 1994; Rousseu and Tijoriwala, 1999). As Schneider et al (1996) state, "…. if the people do not change, there is no organizational change" (Schneider et al., 1996, p. 7). It is first necessary to ensure employee willingness to accept and participate in the organizational changes that affect their jobs.

Yet change can be difficult because it requires people to learn new behaviors and new ways of doing work (Lewin, 1951), such as the changes facing public managers in an era of increasing contracting as described by the National Academy of Public Management (1989). In the case of government outsourcing, those public servants responsible for managing contractors must be accepting and willing to engage in this type of government service delivery. They must "be on board" per se, and committed to effective contract management (Bommer et al., 2005). Without their support, government organizations undergoing changes may realize negative outcomes from their employees such as:

- an increase in absenteeism and turnover (Wanous et al., 2000);
- an increase in negative relationships with department personnel, hostile behavior, and grievance filing rates (Regoli et al., 1991; Wanous et al., 2000);
- lower levels of motivation, performance, and client service (Wanous et al., 2000; Vance et al., 1996);
- lower levels of organizational commitment and organizational citizenship behaviors (Wanous et al., 2000; Andersson and Bateman, 1997); and
- low participation in change efforts and resistant behaviors toward the change (Reichers et al., 1997).

It is promising that many scholars have demonstrated that attitudes tend to be malleable; as such an employee's negative attitude toward a change may be improved (Andersson and Bateman, 1997; Wanous et al., 2000; Reichers et al., 1997; Petty and Cacioppo, 1986; McGuire, 1985; Thompson et al., 2000). Having knowledge of the factors contributing to individual employees' readiness for contracting provides the means for working to improve any negative perceptions before the potentially cumulative effect of a disparaging workforce results in

ineffectual government contracting (Dean et al., 1998; Johnson and O'Leary-Kelly, 2003; Wanous et al., 2000; Wright, 2003).

Despite the importance of the individual employee in organizational change situations, in studies of contracting out, researchers typically do not examine the perspectives of the government employees responsible for managing contractors. Most studies focus on the government agency as the unit of analysis and sidestep or simply ignore the role of individual employees in implementing and managing change in the government's work. The perceptions of those doing the government's work would provide a first-hand viewpoint of these issues that is not typically available or analyzed. Both the practitioner and academic literatures focus on effective ways to contract, but tend to ignore those actually conducting these "ways" of contracting. A few notable exceptions include (DeHoog, 1990) who examines how managers, professionals, and politicos differ in their management strategies of contracts and (Gooden, 1998) who contrasts contract negotiation practices of effective and ineffective contract managers.

Results from this study will be advantageous to government organizations in diagnosing and managing the readiness for contracting of their individual employees. As public sector organizations continue to undergo transformations related to increased outsourcing, it is important to identify the factors that impact employee readiness for contracting. It is important to understand contracting out from their perspectives such that problems can be identified and sufficiently addressed through methods such as training, clear guidance, and effective leadership. The only way to identify these factors is to study the individual employees within the government agency. It is timely, then, to examine these individual government employees responsible for implementing contracting out.

Contracting out of professional services

A third contribution of this dissertation is that this research focuses on the contracting out of professional services in government. Government agencies are going beyond outsourcing

goods and services such as trash collection, road construction, and municipal water provision to contracting out professional services that require high levels of skills such as engineering design work, social services, and accounting. These services are usually conducted by employees who view themselves as professionals and who distinguish themselves from their counterparts employed in non-professional positions.

Individuals employed in professional fields commonly have different expectations from their jobs than their non-professional counterparts. For instance, professionals as a group have a stronger attachment to their work and expect to derive more from it personally than do those in nonprofessional positions (Kleingartner, 1973). They bring to the organization a set of externally derived standards by which they guide their own behavior within the organization (Baer, 1986), such as approaching problems from a "correct" technical perspective unique to the profession (Mosher, 1968). They typically value their independence in making decisions surrounding their work (Miller, 1967; Sorensen and Sorensen, 1974) and expect to be trusted to make decisions using this specialized knowledge (Kleingartner, 1973). When government chooses to contract out the work of professional employees, these professionals may be impacted and react differently than that of non-professional employees.

For example, contracting out professional services work in government can disrupt career paths for highly skilled public employees who often use such posts as stepping stones to senior management. When outside consultants are hired to do their work, it may have large implications because the outside professionals have skill sets that match those of the professional employees employed in the government agency. From the perspective of the professional employee in government, these consultants are their peers in the professional world who they may see as a resource with similar skill sets; however, because they are their peers, they are also in direct competition because they can replace them at the government agency as outside consultants.

Additionally, the types of contracts and laws for contracting out work are different under the Federal Acquisition Regulations (FAR) for professional services such as engineering design

work as government agencies can negotiate contracts based on quality of work, rather than relying on cost as the basis for awarding contracts. Under FAR, outside consultants in professional fields submit responses to a Request for Qualifications (RFQ), whereas in submitting bids for low-bid contracts such as building a bridge, consultants typically respond to a Request for Proposals (RFP). Because of the differences under FAR for consultants in professional fields, government employees in many professional fields may find outside contracting affects their jobs differently than for non-professional government employees.

Despite the growth in government of contracting out professional services, little public management literature discusses the impact that this will have on government employees employed in professional fields. There are a few notable exceptions in the literature – including Romzek and Johnson's (2002) and Van Slyke's (2003) articles on contracting for complex social services (Romzek and Johnston, 2002; Van Slyke, 2003) and DeHoog's (1990) article examining three different types of contract managers (DeHoog, 1990). Instead, most public management literature that examines contracting out is gauged at low-bid contracts or procurement of goods for government. By examining the factors that affect professional employees in government's readiness for contracting, government agencies will have a better understanding of the perspectives of these specialized government employees.

As a result, there is a gap in knowledge about how public professionals react to organizational changes brought about by contracting out their work. However, there is a wealth of organizational change literature addressing how change affects individual employees and how being cognizant of their reactions and roles in the process of change are critical for ensuring the success of any change endeavor. These two bodies of literature need to be brought together.

This dissertation research begins to fill this gap by applying a theoretical framework from the organizational change literature to examine the contracting out of professional services in government from the perspectives of individual employees. The theory of readiness for organizational change is used from organizational change research to study how individuals

respond to changes within their organization. I use this theory as a foundation to develop a *readiness for contracting* construct to examine the readiness of individuals to a specific type of organizational change – that of government employees undergoing organizational changes brought about by increasing contracting of professional services in government.

Readiness for contracting

In the organizational change literature, readiness for organizational change has been conceptualized and defined in a variety of ways; however, each definition is similar in that it refers to the readiness of an individual employee for changes taking place within the organization. The most widely used definition of readiness for organizational change in the literature comes from Armenakis, Harris, and Mossholder's (1993) article in which they attempt to clarify the concept of readiness for organizational change. Their definition of readiness for organizational change refers to individuals' "beliefs, attitudes, and intentions regarding the extent to which changes are needed and the organization's capacity to successfully make those changes" (Armenakis et al., 1993). This definition encompasses two dimensions about an organizational change: 1) whether the change is needed and 2) whether the organization has the capacity to successfully make the change. A contrasting definition of readiness for organizational change comes from Terry and Jimmieson (2003). They state that an individual's level of readiness for organizational change is measured by the extent to which employees hold positive views about the need for organizational change as well as the extent to which employees believe that such changes are likely to have positive implications (Terry and Jimmieson, 2003). This definition differs from that of Armenakis, Harris, and Mossholder's (1993) which focuses more on the first dimension of the concept – the need to change – as well as on how well the organization is able to manage the change, rather than on the outcomes of that change.

This study will use the definition of readiness for organizational change provided by Armenakis, Harris, and Mossholder (1993) as a foundation for developing a readiness for

contracting construct for use in examining government employees' readiness for contracting out professional services in government agencies. In addition to focusing on whether employees believe organizational changes (i.e., contracting out engineering design work) are needed, the definition provided by Armenakis, Harris, and Mossholder addresses an additional important dimension of contracting out government work that has been receiving an increasing amount of attention in the public policy literature – management capacity. A growing number of discussions about government contracting focus on the capacity of government to successfully manage contracts with the private sector. Some of these studies wrestle with issues related to readiness for contracting but do not address the topic directly. By developing a readiness for contracting construct that encompasses the concept of management capacity, I will help solidify the link between existing discussions on government contracting with that of the organizational change literature. The readiness for contracting construct will be further developed in Chapter 2.

Research Problem and Research Questions

This study examines what employee factors act as predictors of employee readiness for contracting. Using 11 career path, involvement, and competence factors identified in the organizational change literature as being related to an individual's readiness for organizational change, I gauge their effectiveness in predicting the readiness for contracting of government employees engaged in contracting out professional services. Individual employees are the unit of analysis. By understanding the factors that positively relate to employee readiness for contracting, government agencies can work to influence employee perceptions favorably. By examining readiness for contracting, we can also explore challenges managers face in adapting to new forms of doing government work. Rather than the potential negative outcomes previously listed, government organizations can instead realize positive employee outcomes associated with implementing contracting out. Thus, this research attempts to provide critical information for

government agencies undergoing transformations as a result of increasing contracting out by answering the questions:

- **What factors predict a government employee's readiness for contracting?**
- **Are there differences in the factors that predict the two dimensions of readiness for contracting? Do different factors predict an individual's beliefs, attitudes, and intentions regarding 1) the extent to which contracting is needed and 2) the organization's capacity to successfully manage contracting?**

Organization of the Dissertation

Chapter 2 presents a literature review on the theory of readiness for organizational change in light of its utility for developing a readiness for contracting construct, factors affecting readiness, arguments for and against contracting, and management capacity in contracting out research. Specific hypotheses are presented based on variables identified in the literature. This chapter also provides a conceptual model for the research. Chapter 3 provides background details on the site for this dissertation research – the Georgia Department of Transportation and the factors affecting its increase in contracting out of professional services. Chapter 4 then delineates the research methodology and data analysis plan. Chapter 5 presents results of the data analysis. Finally, chapter 6 summarizes the research findings, implications for policy and practice, and makes recommendations for future research.

CHAPTER 2:
LITERATURE REVIEW AND HYPOTHESES

Introduction

This chapter reviews the literature on individuals' responses to organizational change and the factors that contribute to those reactions. The theoretical framework for this research is presented by examining issues specific to an individual's readiness for organizational change. First, the reader is presented with literature on the readiness for organizational change theory and development of a readiness for contracting construct. Next, factors contributing to an individual's readiness are explained. The first dimension of the readiness for contracting construct is examined through a review of the arguments for and against government contracting. The concept of management capacity is also explored as a contributing factor to the second dimension of an individual's readiness for contracting. Using variables identified in the literature, Chapter 2 builds on the research questions by presenting the hypotheses for this research. Finally, the conceptual model for this research is presented and implications of the literature for this research are explored.

Organizational Change and the Individual

Most organizational change theory only provides a broad view of organizational change, rather than focusing on the individuals within that organization — for example, by examining what external factors precipitate change in an organization (e.g., Beugelsdijk et al., 2002; Armenakis and Bedeian, 1999) or examining the phases an organization goes through as it changes (e.g., Lewin, 1951; Elrod III and Tippett, 2002). However, a sub-component of organizational change literature looks to the field of organizational behavior to find the theories for how individual employees respond to change in the workplace. One concentration of organizational behavior research focuses on the micro aspects of organizational behavior such as on the psychology of individuals in relation to the organization. This strand of organizational

behavior research uses theories from social psychology to explain how individuals behave in organizations and respond to events such as organizational change and is applicable to this dissertation research.

A review of the organizational change literature identifies various approaches to studying change that are relevant to government employees' potential reactions to increasing contracting out. While this dissertation research focuses on an individual's readiness for organizational changes resulting from increased contracting, numerous other constructs assess related concepts such as resistance to change, cynicism about organizational change, and commitment to change. These and similar constructs are detailed in Table 1.

Table 1: Constructs for Individual Responses to Organizational Change

Construct Name	Description
Readiness for organizational change (also referred to in the literature as "openness to organizational change" (Wanberg and Banas, 2000; Chawla and Kelloway, 2004; McCartt and Rohrbaugh, 1995; Miller et al., 1994))	Defined as an individual's "beliefs, attitudes, and intentions regarding the extent to which changes are needed and the organization's capacity to successfully make those changes" (Armenakis et al., 1993).
Ability to cope with organizational change	Assesses employees' evaluations of the need for changes in the organization, perceptions regarding their ability to cope with such changes, and their perceptions of themselves as initiators of change (Judge et al., 1999; Folkman, 1984; Shaw et al., 1993; Ashford, 1988; Amiot et al., 2006).
Cynicism about organizational change	Is "a pessimistic viewpoint about change efforts being successful because those responsible for making change are blamed for being unmotivated, incompetent, or both" (Wanous et al., 2000, p. 133). Research in this area focuses on the attitudes of the change recipients toward the abilities of those within the organization to implement the change. The focus here is cynicism about the employees within the organization as having the capability to conduct the change, not necessarily cynicism about the change itself. A history of failed change efforts within an organization commonly contributes to this type of cynicism (Bommer et al., 2005; Albrecht, 2002; Wanous et al., 2004).
Readiness to change	Used to explain the stages a person goes through before deciding to intentionally change his behavior. Known as the transtheoretical model of change, individuals go through five stages: 1) precontemplation; 2) contemplation; 3) preparation; 4) action; and 5) maintenance. This model is commonly used in the health literature to explain behaviors such as quitting smoking. The focus is on a phased approach to change and identifying in what stage of the transtheoretical model a person may be (Prochaska et al., 1997; Morera et al., 1998; Forsberg et al., 2004; Dalton and Gottlieb, 2003; Blanchard et al., 2003).

Table 1 Continued

Commitment to a change	Expressed by a willingness to exert effort on behalf of a change (Jaffe et al., 1994; Connor and Patterson, 1982; Machin and Bannon, 2005). "Commitment is different from other constructs in that it represents a behavioral intention to work toward success of the change rather than just reflecting a favorable disposition toward it. As such, commitment to change captures the notion of a positive, proactive intent that is not just the lack of resistance to change or the absence of negative attitudes" (Fedor et al., 2006, p.3).
Preparedness for occupational change	Defined as "the wish to acquire higher task demands (i.e., greater complexity) in the sense that employees have thought about change but have not yet acted to seek change" (Schyns, 2004, p. 248).
Resistance to change	Is an employee's expression of reservation in response to a change. Individuals knowingly and unknowingly resist change through a variety of ways such as criticism of the change, confusion about the change, denial, malicious compliance, deflection, silence, or taking actions to sabotage the change. Much research in this area focuses on ways to identify manifestations of resistant behaviors. Resistance to change is distinguished from readiness for organizational change as resistance is described as specific behaviors while readiness is described in terms of the organizational members' beliefs, attitudes, and intentions (Oreg, 2003; Macrì et al., 2002; Young, 2000; Ford et al., 2002; Giangreco and Peccei, 2005).

While each of these seven constructs is related to an individual's response to organizational change, they are not directly related to each other on a continuum nor are they reverse concepts of each other. For example, readiness for organizational change is different from the other constructs as it deals exclusively with an individual's beliefs, attitudes, and intentions regarding the extent to which changes are needed and the organization's capacity to successfully make those changes. The other constructs focus on different aspects of an individual's response to change. For example, the construct for an individual's *ability to cope with organizational change* examines how an employee feels he will be able to handle a specific change, rather than whether he believes it is needed and whether the organization has the capacity to manage the change effort. Similarly, the construct for *cynicism about organizational change* focuses on a person's perception of the employees' within the organizations ability to implement the change, rather than focusing on the change itself. This is different from the second dimension of the readiness for organizational change construct because the cynicism about organizational change construct is looking at the other individuals within an organization, rather than the organization as a whole. Using the transtheoretical model of change, a person's *readiness to change* is focused on identifying in what stage of the change process a person may be. This approach is commonly used in individual level medical studies such as drug treatment or physical exercise, rather than organizational change studies. A person's *commitment to a change* represents a person's behavioral intention to work toward success of the change. This may be due to reward systems within the organization, rather than the individual believing the change is for the betterment of the organization. Similarly, the construct of *preparedness for occupational change* involves assessing an individual's desire to take on more complex tasks at work, rather than his feelings about a specific change. Finally, *resistance to change* focuses on identifying specific behaviors that are not supportive of change efforts, rather than on a person's attitudes toward a change. Only the readiness for organizational change construct looks at an individual's perception of the merit of the change itself, rather than some secondary aspect of the change such as the ability of fellow

employees to successfully make that change or the desire of the employee to take on more difficult work related to the change.

Development of a Readiness for Contracting Construct

The individual-level construct of *readiness for organizational change* encompasses two ideas that the literature on government contracting is currently probing at the organizational level: 1) the extent to which contracting out is needed in government and 2) the capacity of government to successfully manage contracts with outside organizations. These two topics continue to receive considerable concurrent scholarly attention at the organizational level in public policy research yet few, if any, articles bring these two concepts together. By using the readiness for organizational change construct from organizational change research, I bring together these two fields of research in the development of one readiness for contracting construct.

It is likely that individual employees within a government agency also have varying degrees of feelings about whether contracting out is needed and the capacity of government to successfully manage contracts. However, public policy research is limited in examining individual government employees' reactions to government contracting. By developing a readiness for contracting construct, I bring the ideas from this literature down a step further – to the individual level – by modifying the readiness for organizational change construct to develop a readiness for contracting construct. The readiness for contracting construct examines the readiness of those government employees who have first-hand experience of performing day-to-day contract management. I adapt the two dimensions of readiness for organizational change to the context of government contracting to develop a readiness for contracting construct which is similarly comprised of two dimensions of beliefs, attitudes and intentions surrounding 1) the extent to which contracting out is needed and 2) the organization's capacity to successfully manage contracting out.

The full construct is the sum of these two dimensions as used in readiness for organizational change studies (e.g., Armenakis et al., 1993; Cunningham et al., 2002). The organizational change literature on readiness for organizational change links these two dimensions in order to capture the multi-dimensional aspect of the concept of readiness for organizational change. The concept of an individual being prepared for changes taking place in an organization is examined using numerous terms and ideas (as illustrated in Table 1). I adopt the readiness for organizational change convention used by Armenakis, Harris, and Mossholder because including two dimensions of the construct provides a more comprehensive view of the person's beliefs, attitudes, and intentions toward contracting out. For instance, if a person is adamant that contracting is not needed in a government organization, then he would have a low score for the first dimension of the readiness for contracting construct. However, if he believed that the same government organization was highly capable in managing government contracts, he would have a high score for the second dimension. Using only one of the dimensions does not provide a full picture of that person's beliefs, attitudes, and intentions regarding government contracting. But when the two dimensions are summed together, we would realize that this person is more middle-of-the-road with his feelings toward government contracting. He may think government contracting is not needed in an agency but also feel that the agency is fully capable of successfully managing a contract. Given a choice of whether to contract out or not, he would probably choose to not contract out. However, if he was not given the choice but instead was told that he was not responsible for managing contracts, we would realize that this government employee is not fully resistant to contracting due to his belief that the agency had the capacity to successfully manage contracts. The same logic follows for an individual with a high score on the first dimension and a low score on the second dimension, or two high or two low scores on either dimension. Hence, using a readiness for contracting construct comprised of two equally important dimensions for understanding individuals' beliefs, attitudes, and intentions provides us with a

solid measure of a person's readiness for contracting that encompasses current discussions in the literature about government contracting.

The literature on government contracting for the two dimensions of readiness for contracting are explored in the following sections.

I. Extent to which contracting out is needed

There are many arguments for and against contracting out (Pack, 1991). Results are inconclusive on nearly all facets of these arguments so this research does not take a position on whether contracting out is advantageous or detrimental for government. Nor does it intend to make a judgment based on this study's data. Instead the arguments presented here serve to illustrate the variance in individual views about contracting out. We would expect the diversity of views to also be represented in government organizations with some employees in favor of contracting out and others against it. Those employees who favor the arguments made by proponents of contracting out may also believe that more contracting out is needed in government. On the other hand, those employees who favor the arguments made by opponents of contracting out may also believe that less contracting out is needed. These perspectives thereby contribute to an individual's beliefs about the extent to which contracting out is needed and consequently also contribute to variable readiness for contracting among government employees. Arguments from each perspective follow.

Proponents of contracting out in government

Proponents of contracting out in government present numerous arguments for why government should increase the use of the private sector in government operations. The various arguments in favor of contracting out include:

- Improved efficiency and cost savings: Many in favor of contracting out argue that it improves the government's efficiency and is cost effective (Boyne, 1998; Johnston, 1996; Osborne and Gaebler, 1992; Bennett and Johnson, 1981; Domberger and Jensen, 1997; Pack, 1989; Poole and Fixler, 1987; Savas, 1982). This argument contends that

contracting out fosters and initiates competition among firms bidding for a contract with government, resulting in lower costs for service delivery (Tiebout, 1956).

- Smaller government: A more ideological argument in favor of contracting out contends that a government which governs least governs best. This conservative point of view sees government as a monopoly service provider and seeks to minimize the role of government in the public sector by analyzing public decisions in terms of costs (Buchanan and Tullock, 1965; Ostrom and Ostrom, 1977; Niskanen, 1971; Mueller, 1989; Tullock, 1971).

- Better service and performance: Some argue that the private sector performs better than government as firms can be penalized if their service is of poor quality while no such penalty truly exists for government (Kakabadse and Kakabadse, 2001). Additionally, government is supposed to benefit from relationships with the private sector by learning about innovative techniques and technologies that may help government operate more efficiently in the future (Pattenaude and Landis, 1979; Baty et al., 1971; Gray, 1989).

- More flexibility: Another argument presented by proponents of contracting out says that contracting is more flexible in responding to the needs of citizens (Moon, 1999). Additionally, public managers state that a contract is easier to get approved than the hiring of additional government personnel (Van Slyke, 2003) as contracting enables the public manager to "bypass bureaucratic constraints that would apply if they delivered the service directly" (Schmidt, 2003, p. 308).

- Graying of the workforce: A more pragmatic argument, one that the U.S. Government Accountability Office[1] has recently issued dozens of reports calling attention to, is the graying of the 1.7 million-employee federal workforce and a tidal wave of expected retirements (U.S. General Accounting Office, 2001b). In 2006, approximately 31 percent of Federal employees were eligible for retirement and since younger workers often shun the public sector for more lucrative positions in private industry, there will likely be a shortage of government employees. Only 7.5 percent of the Federal workforce is under age 30, while over 40 percent is age 50 and older (Spors and Fialka, 2002; U.S. General Accounting Office, 2001b). This issue is mirrored in state government as in more than half the states, one in five employees will be retiring over the next several years (Barrett and Greene, 2005). Some government agencies are already realizing a shortage of available employees (Van Slyke, 2003).

- More business for the private sector: An economic development perspective makes the case that public funds would be better spent by providing business to the private sector, rather than paying government to provide a service. As a means of encouraging the private sector to successfully solicit government business, numerous guides provide information on topics such as ways to conduct business with the government (MacManus, 1992b), privatization terms used by the government (U.S. General Accounting Office, 1997b), and overviews of the government contracting process (U.S.

[1] Formerly the U.S. General Accounting Office

General Accounting Office, 1995a; Grasso, 2004; Seitzinger, 1993).

- Core activities: Proponents also assert that outsourcing government functions allows public managers to focus on their organization's core activities, rather than less important work (Brown and Potoski, 2003; Van Slyke and Hammonds, 2003b; Avery, 2000; Kakabadse and Kakabadse, 2001).

Opponents of contracting out in government

In contrast, others assert that contracting out in government is detrimental to the management of government organizations and is having negative impacts on the public sector in general (Kakabadse and Kakabadse, 2001; Haque, 2000; Halachmi and Montgomery, 2000; Kernaghan, 2000). They cite myriad reasons for these views, including those that are concerns about the appropriate role of government, concerns about process, and concerns about consequences:

Concerns about the appropriate role of government:

- Concerns for inherently governmental functions: Some worry that work that should be done only by the government—or is an inherently governmental function—is now being completed by the private sector (U.S. General Accounting Office, 1991). In 1966, the Bureau of the Budget issued *Circular A-76* which defined inherently governmental functions as being "so intimately related to the public interest as to mandate performance by federal employees." These actions include those "which require either the exercise of discretion in applying Government authority or the use of value judgment in making decisions for the Government." Following in 1992, the Office of Federal Procurement Policy (OFPP) distributed OFPP letter 92-1 that provides examples of both inherently governmental (e.g., command of military forces, determination of budget policy) and commercial (e.g., trash collection, road construction) functions. The Federal Acquisition Regulation (FAR) guidelines, Section 7.5, builds on OFPP letter 92-1 to outline inherently governmental functions to ensure that these functions are not performed by contractors.

- Diminution of Constitutional protections: A consequence of contracted public services may be a diminution of Constitutional protections. According to current U.S. Supreme Court interpretations of the State Action Doctrine, the Constitution only limits private organizations if their specific actions are directly attributable to the State (Sullivan, 1987). When public functions are relegated to non-government organizations, citizens' rights may be compromised through less protective rules for the private sector (Gilmour and Jensen, 1998). Contracting out may lead to rejections of certain tenets of American democratic values, including citizenship, civic engagement, the public interest, and community (Morgan and England, 1988; deLeon and Denhardt, 2000).

Concerns about process:

- Lack of competition: Some question the viability of the market model for contracting out particularly when no true market exists if there is an inadequate supply of providers. In a noncompetitive environment, the government is not likely to see any economic benefit to contracting out (Kettl, 1993a; Donahue, 1989; Schlesinger et al., 1986; Pack, 1987; Sclar, 2000; Brown and Potoski, 2004; Van Slyke, 2003; Cohen, 1983; DeHoog, 1985; Johnston and Romzek, 1999; Leitzel, 1992; Morgan, 1992; DeHoog, 1984). Prager warns that "competition cannot be taken for granted; in its absence, the gains from contracting will be diminished, if not dissipated entirely" (Prager, 1994, p. 183).

- High transaction costs: Some argue that the high transaction costs of managing contracting and monitoring contractor compliance outweigh any gains in efficiency; however few studies consider these costs when analyzing contracting out (Johnston and Romzek, 1999; Romzek, 1996; Sclar, 2000; Ferris & Graddy, 1986; Heifetz, 1998).

- Lack of accountability: Accountability is a process in which organizations respond to performance standards and expectations generated by their environment (Kearns, 1996, 1994) and is an area of large concern for many in an era of government reform (Gilmour and Jensen, 1998; Haque, 2000; Romzek, 1998; Romzek and Dubnick, 1998; Leazes, 1997; Gutman, 2000; Salamon, 2002). Contracting relationships "create serious public management and accountability problems for which public administration theory fails to prepare us" (Salamon, 1989, p. 11). When public functions are relegated to non-government organizations, it may enable government and its officials to escape legal responsibility for actions that are paid for by the state. Since the rights of citizens at the hand of public authority are protected by the Constitution and public law, these rights may be compromised at the hands of private parties since very different and less protective rules apply (Gilmour & Jensen, 1998).

Concerns about consequences:

- Questionable cost savings: One of the primary reasons given in favor of contracting out is cost savings; however, opponents question whether contracting out offers any real efficiency gains and cost savings for government (Johnston, 1996; Miranda and Lerner, 1995; Whitfield, 1983; Kettl, 1993a; Hirsch, 1995). For example, in a study of Massachusetts' highway maintenance program in the early 1990s, Sclar finds that by 1994, the state had lost $1 million by privatizing the work (Sclar, 2000).

- Hollowing out of government: In contrast to those who argue that contracting out allows government employees to focus on core activities, opponents argue that contracting out is instead destructive. As government continues to contract out work and the role of government transforms, government employees become more involved in simple oversight of those actually implementing policy — a condition known as the hollow state[2] (Milward and Provan, 2000; Milward et al., 1993). In the hollow state, public

[2] Other scholars have contributed terms for thinking about the government's increasing reliance on private contractors for service provision and resulting 'hollowness' and have termed this phenomenon

organizations lack the capacity to deliver public services themselves and must rely on the private sector for program implementation (Milward et al., 1993; Crawford and Krahn, 1998; Milward, 1994; Sharkansky, 1989; Peters, 1993; Brown and Brudney, 1998).

- Proliferation of corruption and fraud: Problems of corruption, price gauging, and fraud are other issues used in arguments against contracting out as these may be widespread in the process of awarding contracts (Brown and Potoski, 2003; Prager, 1994; Karpoff et al., 1999).

- Extent of reverse contracting: Opponents of contracting out point to the number of government agencies that have brought back in-house previously contracted services (Hefetz and Warner, 2004; Dilger et al., 1997). This "reverse contracting" or "contracting back in" may reflect problems with the contracting process itself, limited efficiency gains, erosion in service quality, principal-agent problems, the high cost of monitoring, or concern over the loss of broader community values (Warner and Hefetz, 2001; Hefetz and Warner, 2004; Warner, 2000; Warner et al., 2003). Studies find that on average, governments contract back in four services for every six services they contract out (Hefetz and Warner, 2004).

- Negative impact on government employees: Another major concern is the impact of contracting out on job security and employment for government employees. Often when governments contract out, they also downsize their workforce (Van Slyke, 2003; Brown and Potoski, 2003; Chandler and Feuille, 1991; Kakabadse and Kakabadse, 2001). The federal government realizes this concern and has issued reports that look at the long-term employment implications of outsourcing on government employees such as layoffs, job transfers to other government agencies, and transfers to work for the government contractor (U.S. General Accounting Office, 1996; U.S. Department of Labor, 1989). Studies show that organized government labor is very concerned about layoffs, erosion of wages and benefits, government operations, and decreased levels of union membership with contracting out (Hebdon, 1995; American Federal of State County and Municipal Employees, 1983; Ballard and Warner, 2000; Chandler and Feuille, 1991; Naff, 1991; Kakabadse and Kakabadse, 2001).

- Uncertain service improvements: The service improvements that are supposed to come with contracting out may be questionable (Miranda and Lerner, 1995; Poister and Henry, 1994). Contracting out can cause service interruptions (Gooden, 1998), coordination problems (Wise, 1990), and may fragment program responsibilities (Chalmers and Davis, 2001).

- Increased regulations: Critics also say that rather than reduce regulations, contracting out can actually increase them (Rosenau, 1999; Teisman and Klijn, 2002). For example, rather than reducing bureaucracy, a change in the contractor for management of the Brookhaven National Laboratory illustrates how contracting led to increased bureaucratic controls and procedures by the U.S. Department of Energy (Rainey, 2004).

"government-by-proxy" (Kettl, 1988), "shadow state" (Wolch, 1990), "contracting regime (Smith and Lipsky, 1993) and "third-party government" (Salamon, 1989).

For nearly every argument in favor of contracting, there are numerous arguments opposing contracting in government. It is likely that government employees are equally polarized in their opinions about the extent to which contracting out is needed in their government organization. These opinions come into play in the first dimension of the readiness for contracting construct: beliefs, attitudes and intentions regarding the extent to which contracting out is needed. The opposing arguments for and against contracting out are summarized in Table 2.

Table 2: Competing Arguments For and Against Government Contracting

Proponents	Opponents
Improved efficiency and cost savings (Boyne, 1998; Osborne and Gaebler, 1992)	**Questionable cost savings** (Kettl, 1993; Miranda and Lerner, 1995) **Lack of competition** (Brown and Potoski, 2004; Johnston and Romzek, 1999; Sclar, 2000)
Smaller government (Niskanen, 1971; Tullock, 1971; Mueller, 1989)	**Concerns for inherently governmental functions** (U.S. GAO, 1991) **Lack of accountability** (Kearns, 1996; Haque, 2000)
Better service and performance (Kakabadse and Kakabadse, 2001)	**Uncertain service improvements** (Chalmer and Davis, 2001; Miranda and Lerner, 1995) **Extent of reverse contracting** (Hefetz and Warner, 2004)
More flexibility (Schmidt, 2003; Van Slyke, 2003)	**Proliferation of corruption and fraud** (Brown and Potoski, 2003; Prager, 1994) **High transaction costs** (Johnston and Romzek, 1999; Sclar, 2000)
Able to focus on core activities (Brown and Potoski, 2003; Van Slyke and Hammonds, 2003)	**Hollowing out of government** (Milward and Provan, 2000)
Graying of the workforce (Spors and Fialka, 2002; U.S. GAO, 2001)	

II. Organization's capacity to manage contracting

In the existing public policy literature on contracting out in government, many authors wrestle with the idea of whether the organization has the capacity to effectively manage contracting (e.g., Brown and Potoski, 2003; Van Slyke, 2003; Van Slyke and Hammonds, 2003a; Davis and Wood, 1998; Romzek and Johnston, 2002). This concept is similar to the second dimension of Armenakis, Harris, and Mossholder's (1993) definition of readiness for organizational change that refers to an individual's perception of the degree to which the organization has the capacity to successfully make a change. Although the public policy and public management literature on contracting out does not directly address the concept of readiness for organizational change, by having discussions about the capacity of government to manage contracting, the field is beginning to delve into an organization's capacity to successfully make a change.

Management capacity is approached in two ways in the public policy literature: in both the activities an organization should be performing and the results it should be achieving. One approach is that of "hollowing out" government. This approach views management capacity as an outcome of contracting out, meaning that the capacity of government to manage its operations would either be improved or diminished. There are arguments for both views. Those who view contracting out positively say that government's management capacity is enhanced as employees now have time to focus on the agency's core activities (Brown and Potoski, 2003; Van Slyke and Hammonds, 2003b). On the other hand, those more skeptical of contracting out say that government's management capacity is diminished as it becomes a "hollow state" in which public organizations lack the capacity to deliver public services themselves and are at the mercy of the private sector for program implementation (Milward and Provan, 2000; Milward et al., 1993).

The other approach to management capacity, and the one used in this study, observes management capacity as the capacity of government to effectively operate and deliver goods and

services, as Brown and Potoski do in their study of contracting management capacity in municipal and county governments (Brown and Potoski, 2003). In this context, management capacity refers to the capacity of government to decide such things as whether a particular service is appropriate for contracting, determine whether vendors exist from which to purchase the service, bid the contract, assess and select a vendor, negotiate contract terms, and evaluate vendor performance. In this dissertation research, management capacity for contracting out refers to the capacity of a government agency to implement and manage contracting out as it is ongoing, not as an outcome.

Concept of management capacity

The concept of management capacity is somewhat nebulous as it is defined in numerous ways in public management literature (Harrow, 2001; Gargan, 1981). For example, one approach defines management capacity as

> *"the ability to identify problems; develop policies to deal with these problems; devise programs to implement the policies; attract and absorb financial, human, information, and capital resources effectively to operate the programs; manage those resources well; and evaluate program outcomes to guide future program activities"* (Honadle et al., 1986, p. 256).

Ingraham and Kneedler provide a slightly more concise definition as

> *"government's intrinsic ability to marshal, develop, direct, and control its human, physical, and information capital to support the discharge of its policy directions"* (Ingraham and Kneedler, 2000, p. 294).

And Gargan provides a short and to-the-point definition by saying,

> *“simply put, a local government's capacity is its ability to do what it wants to do"* (Gargan, 1981, p. 652).

Each of these definitions emphasizes the capability of government to manage its programs effectively.

Studies also identify particular facets of management capacity within various levels of government with research being conducted at the local level (Warner and Hefetz, 2002; Gargan, 1981; Warren and Aronson, 1981), state level (Bowling and Wright, 1998; O'Leary and Yandle,

2000), and national level (Luke, 1989; Wise et al., 1996). Others examine functions within government organizations where management capacity is most important. For instance, some see management capacity as being housed within government's core administrative functions, such as financial management, human services management, capital management, and information technology (Donahue et al., 2000). Using a case of GIS technology implementation, Brown and Brudney identify three key components of management capacity: the perceived effectiveness of project management, strategic planning, and teamwork (Brown and Brudney, 1998). Management capacity therefore can affect the inner workings of a single government department up to the performance of individual countries.

Management capacity and contracting

When government contracts with the private sector it must be a smart buyer in making decisions about what to buy and from whom (Bowen and Collett, 1978), a skillful purchasing agent (Van Slyke, 2003), and a comprehensive inspector of the goods and services it purchases (Smith and Lipsky, 1993). More specifically, government agents must "know what they want to buy... they must know where to shop.... and they must know what they have bought when they have bought it" (Kettl, 1993b, p. 269). However, government typically has not devoted enough resources to build this contracting management capacity (Rehfuss, 1979; Dudley, 1990). "In public administration, thus far, more effort has gone into seeking out additional opportunities to contract for services and charting possible cost savings from doing so than has gone into specifying the management imperatives necessary to develop and manage contracts successfully" (Wise, 1997, p. 576). A study of contracting in the Australian public sector suggests that the use of contracting has occurred so quickly that it outstrips the capacity of government to monitor what is happening, and to learn from mistakes (Davis and Wood, 1998). Because policymakers rarely ask about contract administration it typically receives the least amount of time and attention from government employees (Van Slyke, 2003).

Once the decision to contract has been made, contracting involves structuring the business arrangement, source selection, contract administration, and monitoring to ensure contract terms are fulfilled. Van Horn conducted interviews with public managers in states and municipalities about the contracting out of social services in New York. According to 80 percent of these managers, contract management capacity is needed to develop detailed requests for proposals, solicit bids, evaluate bids, and award contracts. As Van Slyke (2003) states, "public management capacity requires personnel with contract management experience, policy expertise, negotiation, bargaining and mediation skills, oversight and program audit capabilities, and the necessary communication and political skills to manage programs with third parties in a complex political environment" (Van Slyke, 2003).

The specificity of the contract and the government's ability to enforce accountability are also imperative for the success of contracting (Van Slyke, 2003). Governments that lack sufficient capacity to effectively bid and negotiate contracts may enter into deficient contractual arrangements in which they do not have the means to enforce the contract if a contractor does not perform satisfactorily (Kettl, 1993b; Romzek and Johnston, 2002).

Oversight of contractors is concerned with monitoring the actions of contractors (Seidenstat, 1999). In theory, oversight could range over a continuum from total reliance on any product or service submitted in fulfillment of the contract's requirements to a government inspector checking everything the contractor does. It may include anything from inspection of testing of incoming products to the examination of bills that have been submitted to the measurement of contractor performance against contractual service standards (Kelman, 2002).

Numerous studies point to the dearth of contract monitoring capacity of government (e.g., Prager, 1994; Bernstein, 1991; DeHoog, 1984; Davis and Wood, 1998; Bennett and Mills, 1998; Brown and Potoski, 2004, 2003; Van Slyke, 2003; Chalmers and Davis, 2001; Kettl et al., 2005; Handler, 1996). For example, in a survey of city and county managers, only 25 percent could estimate contract monitoring costs (Rehfuss, 1979). However, studies show that the most

expensive part of contracting is monitoring (Kettl, 1993b; Prager, 1994), typically ranging from between two to seven percent of the contract price (Savas, 2000). In 1991, the U.S. Office of Management and Budget reported that the Defense Contract Audit Agency, the federal government's auditor of defense procurement, reported a backlog of nearly 13,000 audits involving approximately $160 billion, which would take from three to five years to complete (Executive Office of the President, 1992). This lack of management capacity can also result in government contracts with third parties to collect data on contract performance (Johnston and Romzek, 1999).

The U.S. government has extensively studied governments' monitoring of contracts and finds that state and local government have "little experience in developing contracts that specify program results in sufficient detail to effectively hold contractors accountable" (U.S. General Accounting Office, 1997a). Numerous government reports affirm these findings in various areas including in the U.S. Coast Guard (U.S. General Accountability Office, 2004); U.S. Air Force (U.S. General Accountability Office, 2005); U.S. Department of Defense (U.S. General Accounting Office, 1997a; U.S. Government Accountability Office, 2005a; U.S. General Accounting Office, 2001a; U.S. Department of Defense, 1996); U.S. Department of Energy (U.S. Government Accountability Office, 2005b), and U.S. Federal Highway Administration (U.S. General Accounting Office, 2005).

These shortcomings are identified internationally such as that in the Australian public sector (Hall & Rimmer, 1994), Canadian social services (Panet & Trebilcock, 1998), and in other countries including Pakistan, Sri Lanka, Guyana, Argentina, and the United Kingdom (Ramanadham, 1994). For example, Bennett and Mills (1998) study the health care sector of developing countries and find that problems arise due to governments' limited capacity to contract with the private sector. Issues include the lack of basic guidelines for contracting, the need for clear lines of communication between all agents in the contracting process, and regular evaluations of contractual arrangements (Bennett & Mills, 1998).

Using data from the International City/County Management Association, Brown and Potoski find that several factors increase the likelihood that government will invest in contract management capacity, including dissatisfaction with prior contract performance; a substantive increase in contracting levels; past investments in contract management capacity; an increase in the percentage of public goods contracted; and an increase in the level of political opposition to contracting (Brown and Potoski, 2003).

Given the emphasis on the need for organizational management capacity for contracting out the government's work, individuals within a government agency who perceive the agency as not having sufficient capacity to manage government contracts may not believe the agency is ready for contracting. They may perceive the agency as not having adequate resource and expertise to adequately monitor contract compliance. An individual government employee who has negative beliefs about his organization's capacity to successfully manage contracting would likely rate low on his readiness for contracting.

Use of the literature in developing a readiness for contracting construct

The literature on contracting out and management capacity provide many insights valuable to informing the development of a readiness for contracting construct. For the first dimension of the construct – an individual's beliefs, attitudes, and intentions regarding the extent to which contracting out is needed – a vast amount of public policy literature is devoted to extolling the merits of contracting out in government. An equally impressive amount of literature is devoted to disparaging the use of the private sector in providing public sector goods and services. There are so many different arguments from either camp that an individual may feel strongly about any one argument or combination of arguments. An individual may feel that government contractors provide better service and performance than government (proponent argument), but also be concerned about the lack of accountability that government may have when contractors are hired to do government work (opponent argument). Because these two

arguments contradict each other, it seems that broadly assessing the extent to which an individual feels contracting out is necessary to accurately gauge an individual's position on the matter. Questions such as "is contracting out needed for your government organization?" are more appropriate than questions that may assess whether an individual perceives cost savings from the use of government contractors. When assessing the first dimension of the readiness for contracting construct, it seems best to capture a person's general opinion on the matter, rather than examining more specific details that may be linked to strong feelings about a particular microcosm of the issue of government contracting.

For the second dimension of the readiness for contracting construct – an individual's beliefs, attitudes, and intentions regarding the organization's capacity to successfully manage contracting out – a similar approach should be taken. There are a plethora of processes involved in government contracting from making the decision to contract out a particular good or service, to negotiating the contract, and to monitoring contractor performance. The public management community devotes considerable attention to each of these processes such that any one process (i.e., deciding whether to contract out) could be considered a subfield of the contracting out literature. In developing a readiness for contracting construct, I suggest that the construct account for these steps equally, rather than focusing on one or two exclusively and ignoring the other equally important aspects of the contracting out process. Observations of the second dimension should be sure to balance the various steps in the contracting process from beginning to end to ensure that they fully account for an individual's perception of the extent to which the organization has the capacity to successfully manage contracting out.

Factors Affecting an Individual's Readiness for Contracting

Studies have found an employee's readiness for organizational change is the result of numerous factors (e,g., Armenakis et al., 1993; Judge et al. 1999; Wanberg and Banas 2000; George and Jones 2001; Wooten 2002; Young 2000). I cluster the variables in three areas: career

path, involvement, and competence factors. Career path factors are those factors that affect an individual's career directly. These include personal impact, job satisfaction, job security, position, tenure, and public service motivation. The second clustering of variables are involvement factors. These are the factors that take account of how involved an individual is with contracting out and include information about contracting out, participation in the decision-making process, and previous experiences with contracting out. The third grouping of variables is competence factors. Competence factors are variables that consider an individual's capability in managing contract out and include contracting self-efficacy and management support. Table 3 presents these variables.

Table 3: Predictors of Employee Readiness for Organizational Change

Career Path Factors	Involvement Factors	Competence Factors
Personal impact	Information about the change	Change self-efficacy
Job satisfaction	Participation in the decision-making process	Management support
Job security	Previous experiences with the change	
Position		
Tenure		
Public service motivation		

Following is a review of these 11 factors. The career path characteristics are presented first, followed by the involvement, competence factors and interaction effects between several of the variables. Specific hypotheses are delineated using each of the variables in their hypothesized relationship to the readiness for contracting construct. I also posit that each of the independent variables affects the two dimensions of the readiness for contracting construct positively, given that I have no evidence or theoretical justification to suspect otherwise.

Career Path Factors

Personal impact

In change processes, people ask themselves "what is in it for me?" to decide whether the new situation is a threat or a benefit to their personal well being (Dalton and Gottlieb, 2003; Armenakis and Harris, 2002). If an organizational change is likely to require additional work or learning new job responsibilities, some individuals may be less likely to view the change as a positive influence on their self interest (Morrison and Brantner, 1992; Zwick, 2002). It follows that if change recipients evaluate the potential consequences as harmful to their interests, they are likely to be non-receptive to the change (Devos et al., 2002; Schneider et al., 1996; Lazarus, 1991). People do what they are rewarded for doing (Burke and Litwin, 1992). Thus the expectation is that:

Hypothesis 1a:

A government manager who perceives the impact of contracting out on himself positively will report more readiness for contracting than a government manager who perceives the impact negatively.

Hypothesis 1b:

The two dimensions of readiness for contracting will be positively affected by personal impact.

Job satisfaction

Alavi and Askaripur (2003) define job satisfaction as a multifaceted construct involving satisfaction from the kind and the nature of work, satisfaction from the manager or supervisor, satisfaction from co-workers, satisfaction from promotion, and satisfaction from salary and wages (Alavi and Askaripur, 2003). Employees who are satisfied in their jobs in these areas have been shown to be more accepting of organizational change. This relationship has been demonstrated numerous times in a variety of contexts.

For instance, Wanberg and Banas (2000) studied members of two state chapters of the National Association of Housing and Redevelopment Officials during a period in which the U.S. Department of Housing and Urban Development (HUD) was being restructured, along with HUD programs and public housing industry regulations. They found that lower levels of job satisfaction were associated with lower levels of change acceptance. Similarly, in a study of 397 employees of a regional water authority in Great Britain, Nelson, Cooper and Jackson (1995) found that during a period of privatization at the authority, employees' reports of job satisfaction declined considerably (Nelson et al., 1995). Numerous other studies corroborate the relationship between job satisfaction and readiness for organizational change (Judge et al., 1999; Wanberg and Banas, 2000; Wanous et al., 1994; Regoli et al., 1991; Chen et al., 2004; Lau and Woodman, 1995; Terry and Jimmieson, 2003; Begley and Czajka, 1993; Martin et al., 2005; Axtell et al., 2002; Iwi et al., 1998).

Accordingly, it is expected that:

Hypothesis 2a:

Government managers who have a higher level of job satisfaction related to contracting out will report more readiness for contracting than those government managers who have a lower level of job satisfaction.

Hypothesis 2b:

The two dimensions of readiness for contracting will be positively affected by job satisfaction.

Job security

Another critical factor in changing organizations is job security. Job insecurity is the lack of control to maintain desired continuity in a threatened job situation (Hui et al., 2000). Job insecurity is comprised of two principle threats: 1) threat to the job and 2) threat to job features (Greenhalgh and Rosenblatt, 1984). An employee's reaction to organizational change is driven by feelings of uncertainty, loss of control, and fear of failure brought about by the change events (Ashford et al., 1989; Cunningham et al., 2002; Chawla and Kelloway, 2004). As the impact of a change on job security becomes more severe, employees perceive the change as less acceptable (De Zanet et al., 2004; Reisel, 2003; Armstrong-Stassen, 2001; Applebaum and Batt, 1993). An increase in contracting out work within an organization may cause individuals to fear for their job security (U.S. Department of Labor, 1989; U.S. General Accounting Office, 1996). Therefore:

Hypothesis 3a:

Government managers who perceive a higher level of job security related to contracting out will report more readiness for contracting than those government managers who perceive a lower level of job security.

Hypothesis 3b:

The two dimensions of readiness for contracting will be positively affected by job security.

Position

Research has indicated that an employee's position within an organization affects how he views change in the organization where he works. Employees with an organizational position higher in the organizational hierarchy such as managers or supervisors are more likely to view organizational change positively than their subordinates. Senior managers may view change as an opportunity for the organization and for themselves personally. In contrast, their subordinates

may view change as disruptive and intrusive to their work (Reichers et al., 1997; Bommer et al., 2004; Brandes et al., 1999; Armstrong-Stassen, 2001; Strebel, 1996).

For example, in a study of management reform in local government, results indicate that the level of support for management reform varies between organizational members based on their hierarchal position. In this study, front-line supervisors — those responsible for the day-to-day implementation of reform efforts — offered more multi-faceted explanations for the reform than senior executives (Walker and Enticott, 2004). These results suggest that senior employees may be somewhat out of touch with the actual day-to-day management of reform efforts and thus less likely to perceive reform as being difficult to achieve, while their subordinates face the harsher realities of putting reform initiatives into place in day-to-day activities.

In a study of university faculty and students during a university change, Lau and Woodman (1995) found differences in views of the change between the two groups, with students being more supportive of the change. They attributed this difference in views to the fact that university faculty would have to implement the change, while students were simply the recipients of the change. The change was therefore less stressful and difficult for the students (Lau and Woodman, 1995). It follows that senior employees may perceive reform as being easier to implement than those employees who are responsible for the actual implementation, thereby causing a discrepancy in attitudes about the change among organizational ranks.

Other studies support this finding. In a study of organizational change in a manufacturing company, results show how stages of readiness to change of key stakeholders was found to vary both horizontally amongst individuals and vertically between job roles (Barrett et al., 2005). Additionally, Axtell et al (2002) examine readiness for change in an organization implementing new technologies and work practices. They group employees into two groups: those with high exposure to the change and those with low exposure. A longitudinal analysis concluded that more exposure to the change increased openness to change for operational employees, but not for managers and engineers (Axtell et al., 2002).

Accordingly, the expectation is that:

Hypothesis 4a:

Government managers with a higher rank in the agency will report more readiness for contracting than those government managers who have a lower rank in the agency.

Hypothesis 4b:

The two dimensions of readiness for contracting will be positively affected by position.

Tenure

Many government employees are career bureaucrats who have worked in the public sector their entire careers (Brown and Grob, 2003). Studies based on career stage models have indicated that determinants of job attitudes change, depending on the particular stage of the career (Fry and Greenfield, 1980; Devos et al., 2002). For example, one survey of city managers shows how the skills and knowledge needs of public administrators evolve as they gain experience such that city managers with a shorter career and tenure are more likely to view administration from a science perspective while those with a longer tenure and more experience view public administration as an art (Crewson and Fisher, 1997). This is partially due to the fact that employees with a longer tenure are more likely to be serving at higher positions within the organization (Walker and Enticott, 2004) and thus may be somewhat out of touch with the realities of implementing organizational change, as explained previously during the discussion of an employee's position in an organization. Therefore it is not surprising that research has shown that employees with a longer tenure in the organization react more favorably to organizational changes. Those employees with a short tenure within the organization are the most likely to be the least receptive to organizational changes, given their responsibilities in making those changes happen (Juenke, 2005).

Other studies support this proposition. For example, in a study of police agencies, officers who had been in service for more than 15 years were less cynical about their police agency and its activities than their less experienced compatriots (O'Connell et al., 1986). An additional study of police agencies also found that police cynicism toward the organization was negatively related to length of service (Regoli et al., 1991). This suggests that employees with a longer tenure in the organization may be more positive about what their organization is able to accomplish.

However, some studies contradict these findings about tenure and readiness for organizational change. These studies conclude that employees with a longer tenure are *less* receptive to organizational change and other variables (e.g., Sinha et al., 2002; Beugelsdijk et al., 2002; Thompson and Van de Ven, 2002; Sorensen, 2000; Beck and Wilson, 2000). These results indicate that previous findings of a positive relationship between readiness for organizational change and tenure may not hold true in other organizational environments. However, I find more evidence in support of the proposition that tenure is positively related to readiness for organizational change.

Therefore, I hypothesize that:

Hypothesis 5a:

Government managers with a longer tenure in the agency will report more readiness for contracting than those government managers who have a shorter tenure in the agency.

Hypothesis 5b:

The two dimensions of readiness for contracting will be positively affected by tenure.

Public service motivation

In their seminal work, Porters et al (1974) conceptualized organizational commitment as a bond between the individual and the organization. It focuses on the relative strength of an individual's identification with and involvement in a particular organization (Porters et al., 1974).

Individuals with a strong organizational commitment have a strong belief in and acceptance of the organization's goals and values; a willingness to exert considerable effort on behalf of the organizational; and a strong desire to maintain organizational membership. An individual's organizational commitment is positively related to his motivation toward the organization (Brandes et al., 1999; Mowday et al., 1979; Siders et al., 2001; Allen and Meyer, 1990; Zangaro, 2001). An individual's level of organizational commitment has been shown to remain relatively stable over time as compared to factors such as job satisfaction or job security (Devos et al., 2002).

The literature identifies organizational commitment as a strong predictor of an individual's readiness for organizational change. I present public service motivation as a construct that is similar to organizational commitment that may also be related to an individual's readiness for organizational change. Public service motivation is not meant to be a substitute for organizational commitment – instead public service motivation is a concept similar to organizational commitment as explained below. As Meyer, Becker and Vandenberghe (2004) state, "theorists and researchers interested in employee commitment and motivation have not made optimal use of each other's work" (Meyer et al., 2004, p. 991). Using public service motivation in this study based on the demonstrated relationship between organizational commitment and an individual's readiness for organizational change is a step in this direction toward cross-fertilization of concepts.

Public service motivation is a similar but different concept from organizational commitment. Public service motivation is an individual's predisposition to respond to motives grounded primarily in public institutions and organizations (Perry and Wise, 1990; Perry, 2000). Scholars examine the motives of individuals for participating in public service such as an individual's value of extrinsic and intrinsic rewards (Brewer et al., 2000; Houston, 2000), as well as an employee's psychological ties to their employer based on investments they have made in the workplace and on feelings of commitment to an agency (Romzek, 1990).

An individual's level of commitment to an organization has been shown to be a contributing factor to how he views organizational change. A study of two different organizational samples — 779 public hospital employees and 877 public sector employees — showed that employees whose perceptions of the organization in which they were working were positive were more likely to view organizational change positively (Martin et al., 2005). Additionally, a study of 474 employees in 30 organizations in the United Arab Emirates demonstrates that an employee's attitude toward organizational change improves as his level of organizational commitment increases (Yousef, 2000). Findings from a study of 464 full-time employees in four companies in northern Utah also indicate that those with higher organizational commitment have a higher readiness for organizational change (Madsen et al., 2005). These studies demonstrate the positive relationship between organizational commitment and readiness for organizational change.

Therefore, while little if any research exists to indicate that an individual's level of public service motivation is positively related to his readiness for organizational change, we can surmise from research on organizational commitment that individuals with higher levels of public service motivation may respond similarly to organizational changes. It makes sense, then, to expect that an individual's level of public service motivation is related to his readiness for organizational change:

Hypothesis 6a:

Government managers with a stronger public service motivation will report more readiness for contracting than those government managers with a weaker public service motivation.

Hypothesis 6b:

The two dimensions of readiness for contracting will be positively affected by public service motivation.

Involvement Factors

Information about the change

Clear communication is critical during organizational change efforts (Armenakis and Harris, 2002; Kreitner and Kinicki, 2001; Miller et al., 1994). The importance of communicating information about the organizational change is identified by individuals who had participated in large-scale change programs. Covin and Kilmann (1990) asked managers, researchers, internal consultants, and external consultants to list issues they believe had an impact on the ultimate success of large-scale change programs. A high degree of communication about the change was listed as one of the top six positive impact issues (Covin and Kilmann, 1990). As identified through a review of organizational change literature in the 1990s, establishing and communicating a need to change with an organization's employees is one of the first important steps to follow in implementing organizational change (Armenakis and Bedeian, 1999).

Consistent with social learning theory, employees are more likely to accept and commit to a proposed change that is clearly communicated to them as an exciting and viable opportunity from which they will benefit (Zimbardo and Leippe, 1991; Bommer et al., 2005; Kotter, 1995; Barrett et al., 2005; Chawla and Kelloway, 2004). Employees are most receptive to proposed changes when management satisfactorily explains the changes, the reasons behind it, and provides assurances regarding the possible negative consequences (Wanberg and Banas, 2000). This helps to reduce the psychological strain associated with change (Bordia et al., 2004; Terry and Jimmieson, 2003). Appealing to employees' emotions using rational arguments is one communication strategy advised by change leaders (Fox and Amichai-Hamburger, 2001).

For example, in a newly merged airline company, results showed that providing change-related information to pilots and opportunities to participate in the change process enhanced levels of readiness for organizational change (Terry and Jimmieson, 2003). Organizational changes are less successful when top management fails to keep employees informed about the

process of change as a lack of information makes it easier to conclude that the change effort is failing which decreases the commitment of employees to the change process (Reichers et al., 1997; Kreitner and Kinicki, 2000; Hoogervorst et al., 2004).

Therefore, it is expected that:

Hypothesis 7a:

Government managers who have more information about contracting out will report more readiness for contracting than those government managers who have less information about contracting out.

Hypothesis 7b:

The two dimensions of readiness for contracting will be positively affected by information about contracting out.

Participation in the decision-making process

Another important contributing factor to an employee's readiness for organizational change is the employee's degree of participation in the decision making processes surrounding the change. The basic premise is that by allowing employees to make decisions over how their work is done, an employee's level of commitment to the organization, motivation, performance, and satisfaction can all be increased (Cotton, 1993; Leana, 1990; Cotton et al., 1988; Moynihan and Pandey, 2005; Pierce et al., 2004; Driscoll, 1978; Sagie and Koslowsky, 1994). On the other hand, employees' lack of participation can be a major cause of disappointing results with organizational change efforts (McNabb and Sepic, 1995).

Numerous studies exemplify how employee participation is a central variable to increase acceptance of organizational change (e.g., Armenakis et al., 1993; Kotter and Schlesigner, 1979; McNabb and Sepic, 1995; Wanberg and Banas, 2000; Lawler, 1988; Bordia et al., 2004; Dunphy and Stace, 1990). For example, Reichers et al (1997) found that employees must believe that their opinions have been heard and given careful respect and consideration for them to be ready to

accept organizational change. Their research indicated that more substantive forms of participation in the change process (i.e., shared decision making) tend to be associated with higher levels of employee commitment to the change (Reichers et al., 1997). Similarly, Sagie and Koslowsky (1996) found that in a sample of 232 government workers, having the workers participate in decision making during an organizational change resulted in greater change acceptance by those employees (Sagie and Koslowsky, 1996). Additionally, a survey of state public welfare executives and local welfare employees in two states found that respondents were not satisfied with the extent of their participation in decision making surrounding organizational changes. The employees believed that they should be permitted to participate to a greater extent in decisions that affect their work (Bruhn et al., 2001).

Therefore, it is expected that:

Hypothesis 8a:

Government managers who participate more in the decision-making process of which projects are contracted out will report more readiness for contracting than those government managers who participate less in the decision-making process of which projects are contracted out.

Hypothesis 8b:

The two dimensions of readiness for contracting will be positively affected by participation in the decision-making process.

Previous experiences with the change

An employee's readiness for organizational change has also been shown to be influenced by an employee's previous experiences with the change. Having positive experiences with the change stimulates the employee's readiness for the change. However, research has also shown that when an employee has previously been involved in an organizational change with negative results (i.e., the change attempt failed), employees may have a loss of motivation and an increase in negative feelings about the change (Schneider et al., 1996; Brief and Guzzo, 1996). Hence:

Hypothesis 9a:

Government managers who have more favorable previous experiences with contracting out will report more readiness for contracting than those government managers who have less favorable previous experiences with contracting out.

Hypothesis 9b:

The two dimensions of readiness for contracting will be positively affected by previous experiences with contracting out.

Competence Factors

Change self-efficacy

Research has indicated that when confronted with situations that they cannot control, many individuals seem to freeze and not know what to do (Jannis and Mann, 1977; Steiner, 2001). This is partially attributable to a person's level of self-efficacy — the belief in one's ability to successfully perform a task (McDonald and Siegall, 1992). The concept of self-efficacy derives from social learning theory (Bandura, 1977). According to this theory, individuals with high self-efficacy at work are more likely to have higher expectations of success on the job (McDonald and Siegall, 1992; Day and Allen, 2004); greater persistence on the job (McDonald and Siegall, 1992); a higher work quantity and quality (Zimbardo and Leippe, 1991; Burr and Cordery, 2001; Gibbons and Weingart, 2001; Judge and Bono, 2001; Renn and Fedor, 2001; Sargent and Terry, 1998; Seibert et al., 2004; Steel and Van Scotter, 2003; Telch et al., 1982); and a belief in having control over his environment and personal successes (Rotter, 1996; Devos, 2003; Gianakos, 2001; Ozer and Bandura, 1990; Stumpf et al., 1987).

Changes taking place within an organization have been shown to affect an individual's perception of his competence to satisfactorily complete new responsibilities, resulting in a related concept known as change self-efficacy (Wanberg and Banas, 2000; Schyns, 2004). Wanberg and Banas (2000) define change self-efficacy as an employee's perceived ability to function well on the job, despite the demands of a changing work environment (Wanberg and Banas, 2000).

Studies indicate the importance of this concept. For example, in a study of 205 telecommunications field service technicians whose jobs had undergone a major technological change, McDonald and Siegall show how a technician's level of self-efficacy with the new technology was positively correlated with his performance regarding the technological change (McDonald and Siegall, 1992) as well as his reaction to technological change within the organization (McDonald and Siegall, 1996). A study of managers' motivation for attempting the leadership of change in a real estate management company and an industrial chemical firm finds that self-efficacy was positively related to a manager's leadership attempts (Paglis and Green, 2002). We may therefore expect individuals with a high degree of self efficacy involving a change that affects their work to be more supportive of the change than those individuals with a lower degree of change self-efficacy.

Because of the differences between individuals with high self-efficacy and those with low self-efficacy, it is important to note that researchers have found self-efficacy to be malleable in the sense that an individual's degree of self-efficacy can be improved through concerted efforts such as additional training. The malleable characteristic of self-efficacy is important as people who think they can do well on a task do better than those who think they will fail. Moreover, differences in self-efficacy have been shown to be associated with actual differences in skill level. Because skill level can be improved through methods such as training efforts, overall organizational performance can benefit in addition to increases in employee self-efficacy (Gist and Mitchell, 1992; Axtell and Parker, 2003; Wolfe et al., 1998; McDonald and Siegall, 1993; Bloom and Sheerer, 1992).

The importance of an individual's self-efficacy leads to the following hypothesis:

Hypothesis 10a:

Government managers with higher self-efficacy in managing contracting out will report more readiness for contracting than those government managers with lower self-efficacy.

Hypothesis 10b:

The two dimensions of readiness for contracting will be positively affected by contracting self-efficacy.

Management support

One of the most commonly studied factors related to readiness for organizational change is the management of that change. As indicated in a study of frontline supervisors in the 22 largest federal agencies, "management matters" for organizational performance and effectiveness (Brewer, 2005). One such condition is that employees must perceive their management to be supportive of employees and their efforts to implement organizational change. Organizations with clear policies and practices regarding the change are more likely to encourage employee acceptance of new organizational procedures (Armenakis et al., 1993; Eby et al., 2000; Fox et al., 1988; Bandura, 1986). In a study of public sector organizations, trust in senior management was also found to be an important ingredient in organizational effectiveness (Albrecht and Travaglione, 2003). When these factors are absent, employees are more likely to be resistant to organizational changes rather than supportive (Rousseau and Tijoriwala, 1999; Eisenberger et al., 1986; Armenakis et al., 1993).

Management support proved to be important in a study of 67 employees working in a state government department who were about to undergo a change regarding computer systems in their department. Results indicate that employees' perceptions of how the organization values its members is associated with heightened levels of readiness for change which, in turn, is predictive of change implementation success (Jones et al., 2005). In another study of a change toward compulsory competitive contracting, employees in an urban local housing authority in the United

Kingdom found improved management practice to lesson the stress associated with implementing new organizational operations (Iwi et al., 1998).

Accordingly, it is expected that:

Hypothesis 11a:

Government managers who perceive more management support related to contracting out will report more readiness for contracting than those government managers who perceive less management support.

Hypothesis 11b:

The two dimensions of readiness for contracting will be positively affected by management support.

Interaction effects

Interaction effects account for the possibility that the effect of an independent variable on readiness for contracting may vary, depending on the level of some other independent variable (Friedrich, 1982; Jaccard and Turrisi, 2003). Interaction effects have been shown to be important to consider in studies on organizations (Aguinis, 2002). Interaction terms are added to the model to include the joint effect of two independent variables on the dependent variable over and above their separate effects. In order to test interaction effects, multiplicative terms were created for several of the independent variables (Aiken and West, 1991). The model includes interaction effects between personal impact and position, between job security and tenure, and between participation in the decision-making process and previous experiences with contracting out.

First, personal impact and position are multiplied as one might assume that the impact of contracting out on an individual might vary with his or her position in the agency. For example, a newly hired design engineer with little experience in the workforce would likely be at a lower position in the agency. The impact of contracting out on his position might be larger than for an individual who retains a high ranking position in the agency and whose job is not directly

impacted by consultants doing similar work. Second, an interaction term for job security and tenure is included in the model because one might assume that the longer an individual has been employed at an agency, the more job security he might have. As a result, it is possible that the longer the tenure of an individual, the greater the effect of his job security on readiness for contracting.

Finally, I include an interaction effect for participation in the decision-making process and previous experiences with contracting out. The effect of an individual's participation in the decision-making process on his readiness for contracting may vary, depending on his previous experiences with contracting out. For instance, if a government employee has been involved to a high degree in decisions surrounding contracting out and has had positive experiences with consultants, then he may report a higher readiness for contracting than an individual who has had negative experiences with consultants. In this way, the more positive his previous experiences with consultants, the greater the effect of his participation in the decision making process on his readiness for contracting score.

Therefore, it is expected that:

Hypothesis 12a:

Position will moderate the relationship between personal impact and readiness for contracting in such a way that the lower the position, the stronger the relationship.

Hypothesis 12b:

The two dimensions of readiness for contracting will be negatively affected by the interaction effect for personal impact and position.

Hypothesis 13a:

Tenure will moderate the relationship between job security and readiness for contracting in such a way that the longer the tenure, the stronger the relationship.

Hypothesis 13b:

The two dimensions of readiness for contracting will be positively affected by the interaction effect for tenure and job security.

Hypothesis 14a:

Previous experiences with contracting out will moderate the relationship between participation in the decision-making process and readiness for contracting in such a way that the more positive the previous experiences with contracting out, the stronger the relationship.

Hypothesis 14b:

The two dimensions of readiness for contracting will be positively affected by the interaction effect for participation in the decision-making process and previous experiences with contracting out.

Conceptual Model

The conceptual framework for this study is based on the theory of readiness for organizational change and the factors that have been found to affect an individual's readiness for organizational change. The factors identified in the readiness for organizational change literature are used to test whether they are predictive of an individual's readiness for contracting. I modify several variables from the literature on readiness for organizational change to fit a readiness for contracting conceptual framework. First, I change the variable "information about the change" to "information about contracting out" to account for contracting out being the subject of interest. Similarly, I modify "previous experiences with the change" to be "previous experiences with contracting out." Finally, I modify "change self-efficacy" to be "contracting self-efficacy." The conceptual framework for this dissertation research builds on the factors identified in the readiness for organizational change literature to construct a readiness for contracting model. A design of this framework follows:

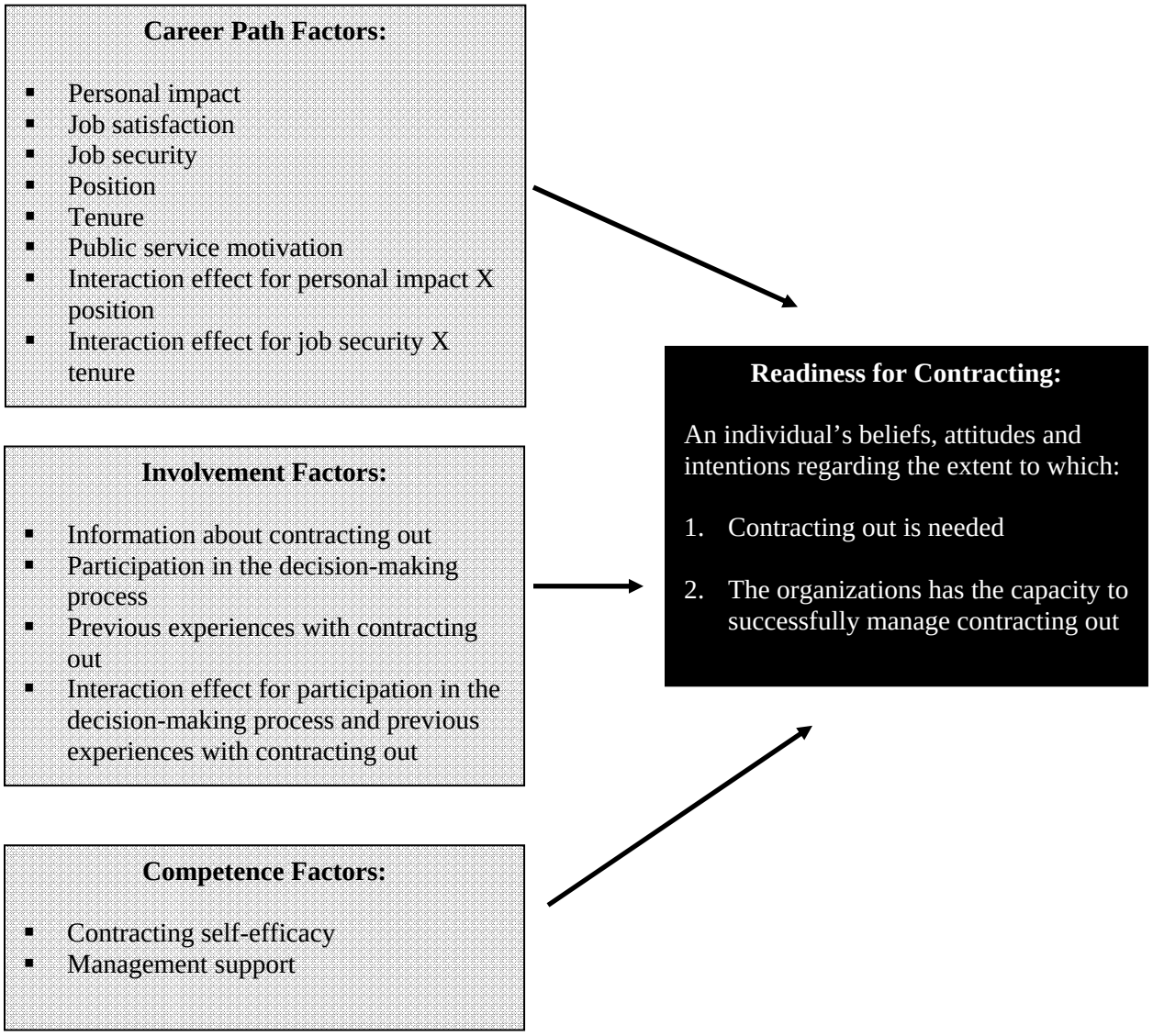

Figure 1: Conceptual Framework

Assumptions and Implications of the Literature

The literature on readiness for organizational change and contracting out makes assumptions and has several limitations that are applicable to this research. In the readiness for organizational change literature, a large percentage of the studies have taken place in the private sector. This dissertation research assumes that the factors that affect an individual's readiness for organizational change will be applicable in a public organization setting as well. Additionally, I am using the concept of public service motivation in the model based on the fact that organizational commitment has been shown to be a predictor of an individual's readiness for organizational change. Several studies suggest that motivation and commitment are related (e.g., Meyer et al., 2004; Allen and Meyer, 1990; Brandes et al., 1999; Romzek, 1990) and so I include public service motivation in the model based on this relationship, even though the literature does not identify public service motivation as a contributing factor to a person's readiness for organizational change. This may be due to the limited number of readiness for organizational change studies that use public organizations as the research sites. This dissertation research will assess whether a relationship between public service motivation and readiness for contracting exists.

New reforms in the public sector mean that many organizations are attempting to cope with turbulent environments (White, 2000). The readiness for organizational change literature provides a strong theoretical foundation for understanding the perceptions of individual government employees in a changing government agency and for developing a new construct – readiness for contracting. However, there is little empirical evidence about the determinants of employee's readiness for organizational change in the public sector (Albrecht, 2002; Stanley et al., 2005), and by extension, readiness for contracting. This study will help fill this gap.

Summary

This chapter examined the literature relating to readiness for organizational change and readiness for contracting. I presented the arguments in favor of and against contracting out and the literature on management capacity in contracting out to show how it helps develop a new construct for public policy – readiness for contracting. For each of the factors identified in the literature as impacting an individual's readiness for organizational change, I presented a hypothesis to test this relationship in a contracting out context. Each of the independent variables will be tested to gauge the extent of their relationship with readiness for contracting, as will be explained in Chapter 4. Chapter 3 will present an overview of the site for this dissertation research – the Georgia Department of Transportation.

CHAPTER 3:
THE GEORGIA DEPARTMENT OF TRANSPORTATION

Introduction

Chapter 3 will present an overview of the research site for this dissertation research – the Georgia Department of Transportation. I provide background information on the site selection for this study and then present contextual information on the agency for the research. This chapter will provide details about the increase in contracting out at the state department of transportation and individual employees' responses to the change. It also explains how the agency is attempting to cope with the changing context of contracting out transportation design and construction work. Finally, this chapter will present the issue of job transformations facing government employees as a result of increasing contracting out of professional services.

Contracting in State Government

Due to decentralization and various restructurings, the federal government has delegated much of the responsibility for implementing government programs to the states and to transportation in particular (Nice and Frederickson, 1995). A recent survey of state governments finds that contracting out for the delivery of services is very common, employed by more than 70 percent of responding state government agencies (Brudney et al., 2005).

Researchers are calling attention to the importance of studying the administrative and managerial employees of state government because they influence most, if not all, aspects of state policies and programs (Bowling and Wright, 1998; Gooden, 1998; Wallin, 1997), including implementation of contracting out in states (Chi and Jasper, 1998; O'Looney, 1998; Coggburn and Schneider, 2003). Additionally, "the proliferation of state contracting suggests that there is legitimate need to study states' capacity to make sound contracting and contract-management decisions" (Johnston and Romzek, 1999, p. 384). At the federal level, the U.S. General Accounting Office has studied states' and localities' lessons learned through contracting out for

understanding smaller-scale change that relates to federal contracting out efforts (U.S. General Accounting Office 1997a, 1995b). State government employees offer the opportunity to study organizational changes at a smaller, more manageable level than that of larger federal agencies.

A 1997 survey by the Council's Center for State Trends and Innovations of the 50 state governments found that state departments of transportation (DOTs) contracted out the most programs and services within state government (Chi and Jasper, 1998). This research will therefore focus on the Georgia Department of Transportation, a state agency in Georgia. The Georgia Department of Transportation (GDOT) has approximately 5,775 employees and an annual budget of $1.6 billion in fiscal year 2005 (Georgia Department of Transportation, 2002). GDOT is organized along three specialized vertical stovepipes (Simon et al., 1950) in one of three areas of transportation work: preconstruction design work, construction, and administration. In recent years, the agency has seen a large increase in its use of outside consultants to provide services for the department.

Increase in Contracting Out of Professional Services

Contracting out work in state transportation agencies is not new; however, the type of work that these agencies outsource is changing. State departments of transportation typically allocate approximately 90 percent of the budget toward construction of a project while the remaining 10 percent of the project budget goes toward preconstruction, engineering design work. State transportation agencies such as GDOT are familiar with contracting out the construction-related component of projects to low-bid contractors such as for the construction of bridges, roads, and the like (Ellis, 2000; Witheford, 1999). However, they typically have not contracted out the design work of these projects but have instead conducted this engineering design work in-house.

During the last ten years, however, state transportation agencies have increasingly been outsourcing engineering design work as well. In 1999, half of state department of transportation

agencies contracted out 50 percent or more of their pre-construction engineering design work. Ten years prior to that, only 20 percent of states contracted out that amount. Correspondingly, the number of states doing 80 percent or more of their pre-construction engineering in-house dropped from over half to about 17 percent (Witheford, 1999).

As is typical for state transportation agencies, GDOT distinguishes between consultants and contractors. This study examines the use of consultants within the agency. Consultants are typically used for professional services (such as engineering design work) and are not selected based on low-bid for services as are contractors. Thus the agency distinguishes between consultants who are typically used for professional services and contractors who provide more other types of services such as road construction. Contractors are selected via low-bid, while consultant selection is based on a variety of other factors including reputation, experience with GDOT, and professional capabilities. This distinction is based on the Federal Brooks Architect-Engineers Act which requires that consultant contracts for engineering and design related services financed with Federal-aid highway funds must result from negotiations which utilize qualifications-based selection procedures. Qualifications-based selection procedures do not allow for price to be used as the sole factor in the selection process.

The distinction between consultants and contractors is an important point as much of the research to date on contracting out in government focuses on contractors who provide goods or services to agencies and are selected based on cost, rather than focusing on consultants who are selected primarily based on qualifications and expertise. This research will therefore provide valuable insights into the contracting of professional services in government which will complement existing research on government contractors.

Consulting Contract with the Georgia Department of Transportation

As a result of the increased number of contracts with the private sector, GDOT employees are facing difficulties in managing their relationships with consultants and established

a consulting contract with researchers within the School of Public Policy and School of Civil and Environmental Engineering at the Georgia Institute of Technology to help improve GDOT's consultant management practices. This dissertation research is allied with this research contract, which serves as an appropriate vehicle for data collection within the agency. Because researchers at Georgia Tech had a contract with GDOT, employees within the agency were receptive to providing details of their experiences with consultant management with these researchers. This scenario has provided an ideal setting for collecting data relevant to this dissertation research.

Georgia Tech's consulting contract with the Georgia Department of Transportation was to identify the types of managerial systems needed to facilitate the effective management of large numbers of consultants. This sponsored research involves a multi-method approach including:

1. A review of existing GDOT consultant management systems;
2. A review of the academic and professional literature on consultant management;
3. Case studies of consultant management practices found in GDOT projects;
4. Case studies of best practices found in other state transportation agencies;
5. Interviews with GDOT project managers;
6. A survey of GDOT project managers; and
7. Interviews with GDOT consultants.

Georgia Tech's research for this project ended in 2004. Research conducted during each of these phases has provided contextual details for understanding GDOT employee's perceptions of management in contracting out. However, the primary data source for this dissertation is the survey of GDOT project managers. Information from the review of existing GDOT consultant management systems and personal interviews with GDOT project managers is used to provide contextual information about GDOT in this chapter. Through semi-structured interviews with 17 personnel in 16 units of GDOT during the summer and fall of 2002, the diversity of perceptions of management in contracting out within GDOT became apparent. (See Figure 2 for the units interviewed within GDOT.)

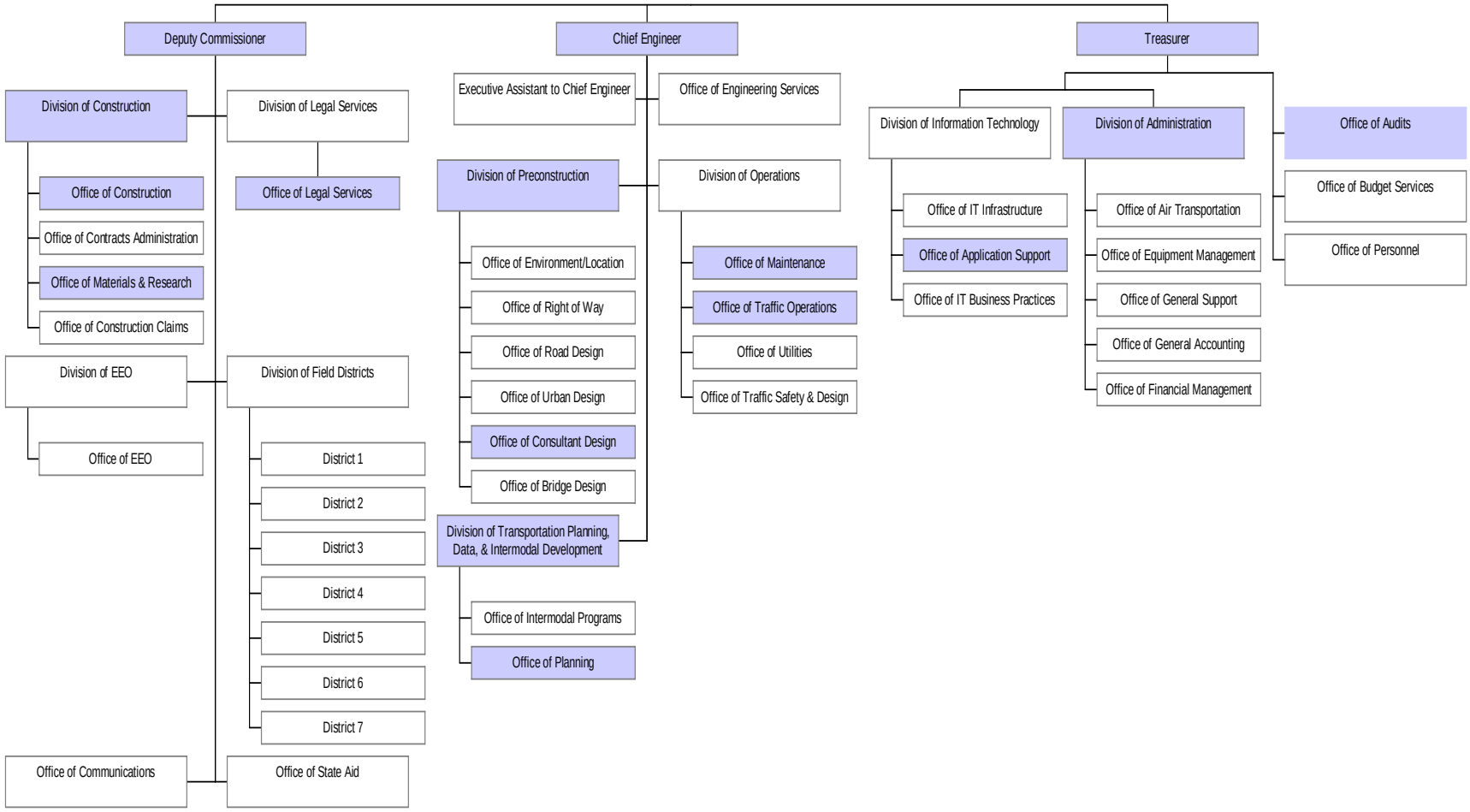

Figure 2: Georgia Department of Transportation Organizational Chart with Units Interviewed Highlighted

GDOT's Increase in Consultant Use

According to GDOT, in 1997 GDOT contracted out only 10 percent of its engineering design work. But by 2004, agency data indicate that 50 percent of this work is performed through contracts with the private sector. According to estimates provided by managers in GDOT, during the 12 year period from 1992 to 2004, GDOT increased contracting out from five percent to 50 percent of GDOT engineering design work[3].

In order to quantify the growth of consultant use within the agency, an undergraduate student assistant[4] working on the GDOT project and I compiled data from GDOT's Office of Budget Services. This office develops a list each month of consultants used by GDOT and the dollar amount of contracts.[5] The list is sent to the State Department of Audits and Accounts in compliance with Georgia regulations to ensure that no consulting firm receives more than 10 percent of the State's architectural and engineering business across all State agencies. From December of 1994 to December of 2002, GDOT paid a total of $438,612,589 to consultants. Figure 3 illustrates the annual amounts paid to consultants by year, showing an increasing trend. Although the funding levels for consultants at GDOT are rising, only a fraction of consultant pool receives the bulk of GDOT work.

---

[3] GDOT has a long history of contracting out work other than professional services (i.e., maintenance services) so its employees have been exposed to contracting out over time.
[4] Patrick Wolfe worked as a student assistant on the Georgia Department of Transportation research study.
[5] The list includes contract amounts for cost-reimbursable, fixed-fee, and task order agreements (*Journal of Management in Engineering*, 1996). However, the data is limited as only the prime firm is listed for contracts under $1 million, but for those over $1 million, the list includes amounts for sub-contractors under the prime consultant. Some firms have merged and changed names which also affect the validity of the data.

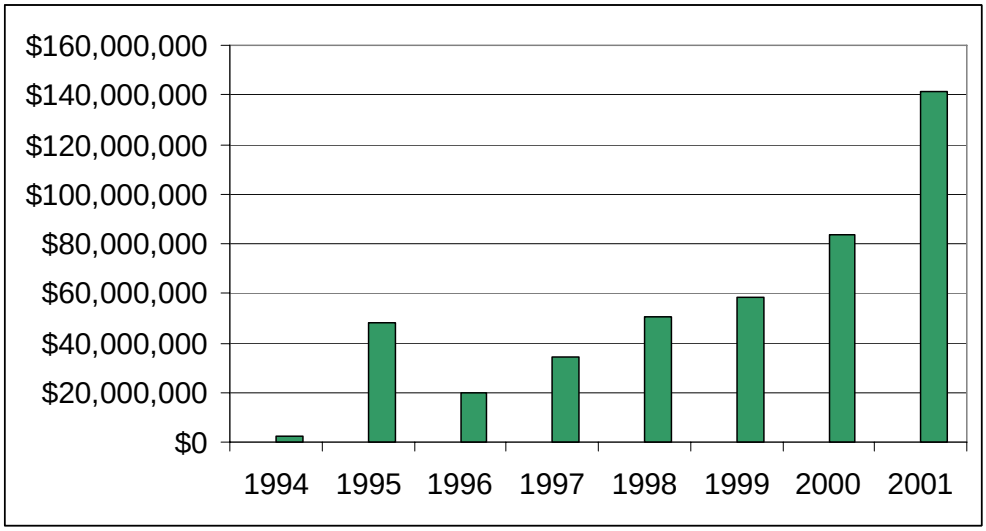

Figure 3: Total Amount GDOT Paid to Consultants by Year

There has been a rapid increase not only in the amount of work contracted out, but also in the number of offices within GDOT that work with consultants. In 1992, only eight GDOT offices had experience in working with consultants. However, by 2004, 75 percent of GDOT's 41 offices had experience in using consultants to do professional work for GDOT.

GDOT staff cite myriad reasons for the increasing use of consultants within GDOT including:

- Reductions in staff size: GDOT's staff size has decreased from 10,000 employees to just less than 6,000. Other state transportation agencies are facing similar issues with staff reductions (Witheford, 1999).

- Increasing work loads: Prior to Georgia Governor Roy Barnes' (unsuccessful) bid for re-election in 2002, road construction around the state was pushed as a visible means of progress in the state.

- Restrictions on spending public monies: Several sources of funds from the federal government and bonds issued in Georgia stipulate the funds may not be used for state employee salaries, thus necessitating the use of private consultants.

- High population growth: According to the 2004 U.S. Census, Georgia was the fifth fastest growing state in the nation, with a population growth of 152,923 residents between 2003 and 2004 (U.S. Census Bureau, 2004b). Additionally, five Georgia counties are on the nation's fastest growing counties list with a growth rate above 20 percent. Four of those counties are in the metropolitan Atlanta area alone (U.S. Census Bureau, 2004a). This population growth puts increasing demands on Georgia's transportation infrastructure, leading to more focus on transportation issues.

- Inability to compete with private sector for employees: The private sector pays higher salaries to professional employees and as a result, GDOT faces difficulties attracting and retaining employees. This issue is also faced by other state DOTs. The Transportation Research Board of the National Academies recognizes this problem and has published studies on recruiting and retaining individuals in state transportation agencies (Transportation Research Board, 2003; Harder et al., 2005).

- Graying of the workforce: Similar to that seen in the federal workforce, many of GDOT's employees are nearing retirement. Of Georgia government's 84,545 employees, 25 percent are eligible to retire in four years and 47 percent are eligible to retire within the next nine years (Barrett and Greene, 2005). Once they retire, GDOT may face a shortfall of knowledgeable employees.

- Political climate: The decision for GDOT to privatize seems to be already made by forces outside the agency's discretion. Employees within the agency cite pressure from the Governor, legislature, public, and private industry to increasingly contract out work.

- Revised public servant rules: The State of Georgia revised its policies that previously prevented public servants from going to work for the private sector firms with whom they interacted in their positions as a State employee. GDOT employees are now free to work for GDOT consultants once they retire from GDOT[6]. Many GDOT employees are finding this to be a lucrative option.

A result of the increase in contracting out at GDOT is that the agency is facing difficulties as it transitions toward an agency that increasingly contracts for professional services such as engineering design work.

GDOT's Buffering Attempts

During the late 1990s, the Georgia Department of Transportation leadership attempted to address this rapid increase in the amount of contracted professional work by creating the Office of Consultant Design (OCD) within GDOT to manage all projects that hire consultants. OCD was established to act as the unit within GDOT that interacted with and managed consultants working on GDOT projects. In effect, OCD was to act as a go-between for design engineers and consultants working on their projects to prevent design engineers from being distracted with day-to-day contract management issues.

[6] In 1996, Georgia had a comprehensive reform of its civil service system designed to decentralize and deregulate the public personnel management process in an effort to overcome the perceived inflexibility, inefficiency, and lack of responsiveness of traditional civil service structures. This reform removed merit system protections from all state government employees hired after July 1996 and placed authority for most personnel management decisions in line agencies and departments, leaving the state's central personnel agency to serve primarily as consultant to those organizations rather than as a regulator of the system. Under the new personnel system, Georgia government employees can be hired and fired under rules similar to those governing private employment (Nigro and Kellough, 2000; West, 2002). Because of the lack of civil service protections for GDOT employees, an employee's job security was not guaranteed. Therefore, individual employees have varying degrees of perceptions about their job security (as shown in the histogram for Job Security in Appendix A). However, a 2000 survey of state employees found that unclassified employees were significantly less negative about the reforms than their classified co-workers. This may be partially due to state agencies maintaining employee management policies that reflect civil service protections (Kellough and Nigro, 2006).

With the formation of OCD, the Georgia Department of Transportation uses a 25-step contracting process, which I identified through preliminary interviews with GDOT managers. Prior to this, GDOT did not have a documented description of their contracting process — clearly indicating less than effective contracting procedures within the department.[7] The 25-step process indicates the complexities involved in managing contracting out that project managers must master. I use Brown and Potoski's three phase contracting process to indicate where each of the 25 GDOT steps fit in the feasibility, implementation, or evaluation phase of contracting out (Brown and Potoski, 2003a). Figure 4 outlines GDOT's contracting process.

[7] GDOT public managers are expected to follow the Plan Development Process (PDP) which provides guidelines for the phases that every GDOT project must go through. The PDP follows specific federal and state laws for administration procedures for projects. However, the PDP does not provide a concise "how-to" guideline for project managers to follow.

Steps	Description	Brown and Potoski (2003) Phases
Step 1	Consultant pre-qualification	**Feasibility Phase**
Step 2	Office of Planning develops 6-7 year plan	
Step 3	Individual office receives project	
Step 4	Office decides to use consultant	
Step 5	Office requests use of consultant	
Step 6	Management reviews request	
Step 7	Request moves to Office of Consultant Design	
Step 8	Contracting office advertises opening	**Implementation Phase**
Step 9	Consultants submit Statement of Qualifications or proposal	
Step 10	Review committee assembles	
Step 11	Review committee reviews submittals	
Step 12	Submittals are ranked	
Step 13	Final review committee looks at rankings	
Step 14	Consultant selected	
Step 15	Winning consultant recommended to management	
Step 16	Consultant prepares proposal	
Step 17	Negotiations between GDOT and consultant	
Step 18	Pre-award audit by the Office of Audits	
Step 19	Consultant makes necessary changes to proposal	
Step 20	Contract developed	
Step 21	Contract routed	
Step 22	Consultant issued notice to proceed	
Step 23	Contract management	
Step 24	Final audit by Office of Audits	**Evaluation Phase**
Step 25	Consultant evaluation	

Figure 4: GDOT 25-Step Contracting Process

Despite the intent of GDOT for the Office of Consultant Design to simplify the act of consultant management within the department, it was a short-lived solution. The amount of professional work being contracted to the private sector quickly overwhelmed OCD and many GDOT engineers are again responsible for managing consultants who are designing work for the department. Many GDOT engineers are now responsible for their own projects in which they do the design work as well as being responsible for overseeing consultants who are also doing design work on GDOT projects. The Office of Consultant Design continues to be involved in the steps of GDOT's 25-step contracting process; however, GDOT's project engineers continue to be involved in the day-to-day administration of contracts with consultants.

Transforming Jobs

The increase in contracting out in GDOT has resulted in engineers serving as contract managers within the agency. This job transformation can be frustrating for GDOT employees as a result of numerous factors including a human capital mismatch, inexperienced management, and changing requirements for cooperation across GDOT units.

Human capital mismatch

In the preliminary interviews with managers at the Georgia Department of Transportation, these employees expressed a concern with a human capital mismatch and incompatible role expectations in their positions (Whetten, 1978; Kahn et al., 1964). Some of these perceptions of GDOT employees are exemplified in GDOT's organizational culture in which technical work is the most highly regarded as employees take pride in the work of GDOT in providing quality public roads (Barringer and Jones, 2004; Milton, 1995). One interviewee proudly noted that the Federal Highway Administration consistently ranks Georgia's highways as the smoothest pavements in the country, as also noted in a transportation trade publication (Swanlund, 2000).

Quotes taken from interviews with project managers within the Georgia Department of Transportation illustrate some of the complications in this contracting out environment:

- "Engineers have not had training in the business side of management for consultants. There is resistance to taking on those responsibilities."
- "Turnover is due to low pay and false expectations that engineers will be doing engineering work."
- "There's a mismatch with engineers doing project management work they are not trained for; we would be better off hiring MBAs."

Many employees within GDOT are professionals trained as civil engineers; however, with an increasing trend toward contracting out within the agency, these engineers are now required to serve as contract officers (Cooper, 1980; 2003) and must manage consultants who are now responsible for the engineering work. The human capital mismatch brings about frustration on the behalf of GDOT employees who may be resistant to the changes brought about by contracting out (Brower and Abolafia, 1995).

These managers may also oppose contracting because they fear loss of control, authority, power, and resources (Kettl, 1988). They may also view the impact of increasing contracting out on themselves negatively, feel less secure in their job, or may not feel confident in their own abilities to successfully manage contracts. They may also have had previous negative experience with consultants. This frustration by some GDOT employees is exemplified in one interview with a GDOT public manager in which he referred to consultants as "insultants" throughout the interview.

A recent report from the Transportation Research Board recognizes this issue by identifying contracting out as part of the critical issues facing the transportation workforce in the United States. It states, "the future workforce will need to address an ever-increasing reliance on technology; alternative means of finance; increased contracting for services; more public-private partnerships; operating transportation as a system; and new approaches to balance transportation objectives with goals for energy, environment, equity, security, and safety." (Transportation

Research Board, 2005, p. 8). Addressing how contracting out affects the human capital issues in transportation agencies and better preparing those employees for contracting is essential for transportation agencies.

For instance, design engineers within state transportation agencies have served an important role within the agencies. Trained as civil engineers, they typically provide their services in assorted engineering design departments with the agency prior to climbing the career ladder into management positions. Civil engineering is the field that defines the work of state transportation agencies; hence the civil engineers within the agencies are commonly the ones assigned leadership positions. Now that much of the engineering design work in state transportation agencies is contracted out to the private sector, the issue of future leadership within the agencies comes into question.

Inexperienced management

Another issue facing GDOT is the graying of the workforce in which many of its knowledgeable employees are retiring. This research parallels what many government studies are saying about the federal and state government workforce. With an increase in contracting and reduction in the number of experienced managers, GDOT is putting individuals into project management positions who may not have the necessary skills or experience to be effective (Belker, 1997). A recent independent study found that GDOT has the highest level of employees receiving promotions (13%) than in any other Georgia state agency (Barrett and Greene, 2005). These new project managers are responsible for managing and making complex decisions regarding consultants and contractors who are implementing large road design and construction projects across the state (Easton, 1973; Mintzberg, 1973; Bazerman, 1986).

Most of these employees are thrown into their new managerial positions with only a small amount of preparation. The technical training of GDOT employees does little to prepare them for managing contracts and many employees do not place much value on learning more

about management even though their job is to manage contracts. As previously noted, most GDOT employees working as managers are trained in civil engineering. However, GDOT provides little training to make the transition smoother for employees and as a result, these public managers often muddle through the contract management process (Lindblom, 1959). Quotes taken from interviews with GDOT project managers exemplify the frustrations GDOT faces in contracting, partially due to inexperienced project managers:

- "Negotiations [between GDOT and consultants] can drag on for months."
- "Auditing is driving us nuts. One geo-tech firm has been audited six times in a six-month period."
- "Scopes of work [in contracts] are becoming less detailed and causing cost overruns."
- "Rarely have projects come in on time or on budget. Failure to specify the scope of work is causing projects to fail."
- "We need to improve on how consultant contracts are administered. Consultant management is not being addressed except on a piecemeal basis."

Changing cooperation requirements across GDOT units

Another factor that is transforming the jobs of GDOT employees is federal policy changes that result in the need for increased cooperation across the three GDOT organizational stovepipes: administrative, preconstruction, and construction. Recent rule changes at the federal level change the way state department of transportation projects are implemented. Prior to the Federal Acquisition Reform Act (FARA) of 1996, federal policies required federal agencies awarding road construction contracts to use a two-phase selection procedure. In the first phase, a state DOT released a solicitation that defined the project and included enough details for contractors to develop and submit proposals. In their proposals, the bidders were required to specify their technical approaches and qualifications, but were not permitted to include detailed design and cost information. In a process known as short listing, the state DOT would then select a few of the most highly qualified bidders and ask them to submit a full proposal in which they

could include detailed design and cost information. The state DOT would then award the contract to one of the competing bidders, even though the winner may not have offered the lowest price. This process was intended to ensure that the quality of a road construction's design was not compromised by cost concerns (Witheford, 1999). It also allows for government to maximize certainty in contracts in order to reduce unpleasant surprises once the contract is let (Kettl, 1993b).

In this manner of contracting for design and construction of projects within GDOT, projects first went through the preconstruction design phase in one organizational stovepipe in GDOT, and then proceeded to the construction stovepipe. However, Section 1307(c) of the 1998 Transportation Equity Act for the 21st Century required the Federal Highway Administration (FHWA) to change this rule by permitting the use of design/build contracting in which one firm could bid both the design and construction work for a project at one time. This rule change incorporates both design and construction into a single contract (Landers, 2003). Prior to the 1998 Transportation Equity Act for the 21st Century, employees in the preconstruction stovepipe of GDOT would work with outside consultants and contractors fairly independently from GDOT employees in the construction stovepipe of GDOT. With the advent of design/build contracts, GDOT employees must collaborate across GDOT units which changes the ways employees within the agency interact. The Transportation Research Board's Design-Build Task Force and the Management and Productivity Committee cosponsored a session at the Transportation Research Board Annual Meeting in 2004 to consider solutions to this growing issue within state departments of transportation (Harder et al., 2005).

As a result of a human capital mismatch, inexperienced management, and changing federal rules for awarding contracts in the transportation sector, many employees in state departments of transportation are realizing the effects of these transformations on their daily jobs. The old way of doing DOT work has changed due to increasing contracting out of professional

services within the agency. Some employees may be well prepared for these changes, while others may report less readiness for contracting.

Contract Management Capacity at the Individual Level

Several studies delineate the specific practices of employees that contribute to a government organization's capacity to manage contracting. One such practice is that successful managers emphasize the importance of pre-bid activities, particularly in planning and needs assessment. So if a GDOT manager perceives GDOT's pre-bid capabilities (steps 1-7 in the GDOT 25-step contracting process) as insufficient, he may also view the organization's management capacity in the same light. Successful contract managers also provide bidders with sufficient budget and program information (step 8 in the GDOT 25-step contracting process) about contracting opportunities. Another successful practice is the including other staff's expertise and a large number of participants in reviewing and rating proposals (steps 10-14 in the GDOT 25-step contracting process). Successful managers also use a standard rating form as a tool to rate proposals. They also conduct responsive debriefing sessions with bidders in order to reduce the number of appeals (Gooden, 1998). If a GDOT contract manager perceives GDOT as an organization as being inadequate in any of these areas, he may view the management capacity of GDOT negatively, resulting in a lower readiness for contracting.

Another study of effective contract management finds four core capabilities in which managers need to be skilled. First, he is able to understand and successfully integrate the different ways of working of his own organization and the contractor's. This can be difficult as even government contractors find that contracting out in engineering projects makes management of projects difficult as multiple organizations are usually involved (Berggren et al., 2000). Second, he is able to clearly target which goods or services should be contracted out. Third, he is able to effectively monitor the performance of a number of different contractors simultaneously. Finally, he is able to motivate other employees within his organization to meet the outsourcing challenge

(Kakabadse and Kakabadse, 2001). In preliminary interviews with GDOT project managers, individuals provided varying perspectives on these issues.

A further study surveys construction-related professionals to identify the most important skills of effective project leaders in the construction industry. The results show that the most important skill is decision making, followed by leadership and motivation, and then communication (Odusami, 2002). Others have also identified leadership as a critical component of implementation of long-term and strategic goals within public organizations (Van Wart, 2003; Anderson 1996; Javidan and Waldman 2003). Leadership is therefore an important factor in understanding a government agency's management capacity and again, GDOT interviewees provided opposing views on GDOT's leadership; some applauded GDOT's leadership for contracting out, while others criticized the agency for deficient leadership practices.

Summary

This chapter provided an overview of the Georgia Department of Transportation and the issues it faces due to increasing contracting out of professional services at the agency. It explained GDOT's buffering attempts to cope with the increase in contracting out by creation of the Office of Consultant Design. The reasons behind the job transformations facing GDOT employees were explained. It is important to acknowledge that the GDOT environment is one in which it is easily recognized that an organizational change has occurred – an increase in contracting out in the agency which represents a significant change for GDOT. Finally, this chapter examined contract management capacity at the individual level to look at some of the management capacity factors that contribute to an individual's readiness for contracting. Chapter 4 will present the research methodology and data analysis plan used for the analysis of GDOT employees' readiness for contracting.

CHAPTER 4:
RESEARCH METHODOLOGY AND DATA ANALYSIS PLAN

Overview

This research is based on a survey at the Georgia Department of Transportation (GDOT). The survey was developed for purposes of a larger study that includes questions related to variables for this dissertation research. The survey respondents are a sample of GDOT employees who have experience in managing consultant contracts for professional services. Their responses to the survey provide data that is used to test a model of readiness for contracting (Figure 1). This chapter delineates the research methods and analysis plan using data from the GDOT survey.

Sample Description

According to senior managers within the Georgia Department of Transportation, approximately 900 of the estimated 5,775 employees within GDOT interact with consultants through processes such as audits, accounting, and project management. Of these, approximately 300 GDOT employees serve as project managers directly involved in the management of consultant projects. Because no single employee title includes all of GDOT consultant project managers and because the incidence of contracting has increased so rapidly in recent years, the sample frame was developed through purposive sampling by telephoning, e-mailing, and faxing all office heads within the agency to request telephone numbers and mailing address for all GDOT employees who work with consultants. Several offices reported that no individuals worked with consultants, while one office reported that 25 individuals worked with consultants on behalf of GDOT. The sample frame represented GDOT employees involved as project managers, to administrative personnel, to lawyers, and to division heads. This generated a list of 286 employees from eight divisions, 41 offices, and seven districts across GDOT. After this initial list was compiled, the research team contacted the individuals on the list to verify the

accuracy of their contact information. Minor changes to 26 individuals' contact information were made prior to the surveys being mailed.

Project Manager Survey

A survey of GDOT project managers was a key component of Georgia Tech's consulting contract with GDOT and serves as the data source for this dissertation research. Survey questions and design were informed by preliminary semi-structured interviews with GDOT employees. The survey design was pilot tested with three GDOT project managers – two current employees and one former employee. Once changes were made based on the pilot results to question design and survey format, including additional questions, conceptual clarifications, and improved language consistency, the survey was sent to 286 GDOT consultant managers in June 2003. The survey was professionally designed to be reader-friendly and convey high quality. The final survey design comprised 16 pages, 33 questions, and approximately 300 individual items. (See Appendix F for the survey.)

The survey was designed and implemented in accordance with the best practices outlined in Dillman's *Tailored Design Method* (1999). These practices include: 1) a questionnaire with reader-friendly content; 2) five personalized contacts that vary slightly in format, but retain a consistent "look"; 3) carefully crafted messages regarding the importance of the survey content; and 4) the provision of self-addressed envelopes affixed with postage stamps.

Following Dillman's guidelines, the survey delivery process proceeded through five phases. First, agency managers received a letter from an agency department head alerting them that the survey would be arriving shortly. The letter was printed on GDOT letterhead paper and sent through the agency's interdepartmental mail. (See Appendix E for a copy of the letter.) Next, a survey package was mailed though interdepartmental mail and included a cover letter from the

principle investigator[8] from Georgia Tech explaining the purpose of the survey and its importance for GDOT, a copy of the survey, and a stamped self-addressed envelope. The survey materials stressed that participation was voluntary and that individual results would be kept confidential. Three days later, each of the 286 survey recipients received a postcard in the mail reminding them of the survey and requesting that they contact the principle investigator if they had not yet received the survey or if they had any questions about the research. (See Appendix G for a copy of the postcard.) Each survey was identified with a code number known only to the researchers and was used for matching purposes in the second phase of data collection. In the third week, non-respondents were sent another survey package. In the fourth week, non-respondents received a follow-up telephone call to remind them of the survey.

[8] The principle investigator for this research is Dr. Gordon Kingsley in the School of Public Policy at Georgia Tech.

Table 4: GDOT Survey Timeline

Date	Task
June 9, 2003	Alert Letters Distributed
June 13, 2003	First Survey Package Mailed
June 19, 2003	Reminder Postcard Mailed
June 23, 2003	Second Survey Package Mailed
July 7-14, 2003	Telephone calls to non-respondents

All survey materials were returned directly to the research team. 232 completed surveys were returned, for a response rate of 81.1 percent. The percentage of mail surveys received from the different agency offices is proportional to the percentage distributed to them, suggesting a sample highly representative of managers working with consultants across the organization. Responses to this survey were scanned and input into SPSS for analysis. Additionally, a data codebook was developed to explain measures for each question which is valid for this research. (See Appendix H for the codebook.)

The demographics of the survey respondents are presented in Table 5. A majority (81%) of the respondents were male, many were in mid-career (41.8% aged 36-45), and a majority held a Bachelor's degree (59.1%) while a small percentage also held a Graduate degree (15.1%).

Table 5: Survey Respondents' Demographics

Demographics	Percentage of Respondents*
Age	
under 30	9.1%
30 – 35	15.1%
36 – 45	41.8%
46 – 55	27.6%
over 55	5.2%
Sex	
male	81.0%
female	15.1%
Highest level of education	
high school diploma	6.0%
some college education	9.5%
associates degree	9.1%
undergraduate degree	59.1%
graduate degree	15.1%

* Percentages do not add up to 100% due to missing survey responses.

Additionally, Table 6 presents the roles the respondents played in GDOT. The percentage of responses in each role is proportional to the percentage of surveys distributed for each title within GDOT, suggesting a representative sample of respondents. Table 7 presents the percentage of projects involving consultants on which a project manager works and the percentage of individuals who work at the GDOT headquarters office versus in a district level office across the state.

Table 6: Survey Respondents' Roles in GDOT

Role	Percentage of Respondents
Accountant	3.9%
Administrator	15.9%
Auditor	2.6%
Supervise construction engineer/inspector	30.6%
Project manager (construction)	25.0%
Project manager (preconstruction)	38.8%
Project manager (other)	17.2%
Consultant liaison	30.2%
Design engineer	40.5%
Legal advisor	1.7%
Planner	7.3%
Information technology specialist	5.2%
Environmental and location specialist	3.4%
Right of way specialist	6.9%
Other	12.5%

* Percentages do not add up to 100% due to respondents having served in more than one role at GDOT.

Table 7: Respondents' Location and Percentage of Projects that Use Consultants

	Percentage of Respondents
Location	
Headquarters	59.1%
District level office	40.9%
Percentage of Projects that Use Consultants	
0-25%	14.4%
25-50%	27.8%
50-75%	15.0%
75-100%	30.5%

* Percentages do not add up to 100% due to missing survey responses.

Measurement of Variables

The dependent variable for this research is readiness for contracting. There are 11 predictor variables. The measurement for each of these is explained below.

Dependent Variable: Readiness for Contracting

The concept of readiness for contracting is operationalized as an individuals' beliefs, attitudes, and intentions regarding 1) the extent to which contracting out is needed and 2) the organization's capacity to successfully manage contracting out. The dependent variable is the sum of these two concepts. These will be measured using the data from the survey of the Georgia Department of Transportation managers. The extent to which contracting out is needed is measured using four questions from the survey and constructing a multiple item summative scale to form a single measure.

According to Spector (1992), a summative scale consists of four characteristics. First, the scale must contain multiple items. Second, each individual item must measure something that has an underlying, quantitative measurement continuum such as an attitude. Third, each item has no "right" answer. Finally, each item in a scale is a statement, and respondents are asked to give ratings to each statement (Spector, 1992). A good summated rating scale must also be valid. Validity means that a scale measures its intended construct. The measure for "extent to which contracting out is needed" meets each of these requirements.

Reliability on the summative scale was tested using inter-item correlation analysis (Nunnally, 1978; Spector, 1992) through calculation of Cronbach's alpha (Cronbach, 1951) which estimates how consistently individuals respond to the items within a scale. Cronbach's alpha measures the extent to which item responses obtained at the same time correlate highly with each other. It takes into consideration the number of items used in the scale, based on the theory that the more items, the more reliable a scale will be. As the number of items rises, alpha rises.

The widely accepted social science cut-off is that alpha should be .70 or higher for a set of items that is considered a scale.

To obtain a summative scale for the "extent to which contracting out is needed" dimension of the readiness for contracting measure, individual squared multiple correlation coefficients were estimated for a number of questions from the GDOT project manager survey and reviewed to determine the sensitivity of the alpha score. The Cronbach's alpha for the scale is 0.84, indicating a reliable scale. The questions ask respondents to indicate on a four-point Likert scale ranging from strongly agree to strongly disagree their response to the following question: "How much do you agree or disagree with the following statements about consultant usage at GDOT? 1) Consultants are necessary to accomplish GDOT's mission; and 2) The use of consultants is good for GDOT." It also asks them: "To what extent do you agree with the following endings to the statement 'GDOT would be better off if…': 1) All the work was performed in house without hiring any consultants; and 2) More consultants were hired to assist GDOT." I reverse coded the responses to "1) All the work was performed in house without hiring any consultants" such that the item expresses the opposite of the concept being measured. Since an individual would who rated the item highly as it is worded in the survey would have negative feelings about consultants, reverse coding the responses provides for higher numbers to be associated with more positive feelings about the use of consultants. The summative scale score was derived by adding these four individual questions and dividing by the number of items in the scale to obtain an average score.

The second dimension of measuring an individual's readiness for contracting is measuring an individual's beliefs, attitudes and intentions regarding the extent to which the organization has the capacity to successfully manage contracting out. This measure is constructed using four questions from the survey. The questions ask respondents to indicate on a four-point Likert scale ranging from strongly agree to strongly disagree their response to the following question: "How accurately do the following phrases describe your experiences with consultants?

1) Upper management has a vision for how consultants fit into the GDOT mission. 2) GDOT has an appropriate level of rules and procedures for consultants to follow. 3) GDOT has clear policies on the types of projects that should use consultants. 4) GDOT has the internal administrative capabilities to manage consultants." A summative scale was constructed by summing the responses to the four questions and then dividing by four to obtain an average score. The internal consistency of the summative scale was calculated using Cronbach's alpha for an alpha of 0.76, indicating a reliable scale for the extent to which the organization has the capacity to successfully manage contracting out.

The variable of readiness for contracting was determined by summing the scale measures for an individual's beliefs, attitudes, and intentions regarding the extent to which 1) contracting out is needed and 2) the organization has the capacity to successfully manage contracting out. The range for the scale is 0 to 6. Table 8 presents the measurement of the dependent variable.

Table 8: Dependent Variable – Readiness for Contracting

Variable	Operationalization	Survey Questions	Measurement	Scale
Readiness for contracting	Is an individual's beliefs, attitudes, and intentions regarding 1) the extent to which contracting out is needed and 2) the organization's capacity to successfully manage contracting out	<u>Extent to which contracting out is needed:</u> How much do you agree or disagree with the following statements about consultant usage at GDOT? *DV1: Consultants are necessary to accomplish GDOT's mission.* *DV2: The use of consultants is good for GDOT.* To what extent do you agree or disagree with the following endings to the statement "GDOT would be better off if….." *DV3: All the work was performed in house without hiring any consultants.* *DV4: More consultants were hired to assist GDOT.*	Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree) Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree) Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree). I reverse coded the numbers for my calculations such that 0 = strongly agree and 3 = strongly disagree so that higher numbers reflect more positive feelings about contracting. Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree)	A summative scale was constructed for willingness to support the change by summing DV1 + DV2 + DV3 + DV4 and dividing by 4. The Cronbach's alpha is 0.84, indicating a reliable scale.

Table 8 Continued

	<u>Extent to which the organization has the capacity to successfully manage contracting out:</u> How accurately do the following phrases describe your experiences with consultants? *DV5: Upper management has a vision for how consultants fit into the GDOT mission.* *DV6: GDOT has an appropriate level of rules and procedures for consultants to follow.* *DV7: GDOT has clear policies on the types of projects that should use consultants.* *DV8: GDOT has the internal administrative capabilities to manage consultants.*	 Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree) Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree) Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree) Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree)	A summative scale was constructed for the organization's capacity to successfully make those changes by adding DV5 + DV6 + DV7 + DV8 and dividing by 4. The Cronbach's alpha is 0.76, indicating a reliable scale.

Independent Variables

The following 14 variables are used as independent variables in the model. These are measured as presented in Table 9. The career path factors are presented first, followed by the involvement and competence factors.

Career Path Factors

Personal impact is operationalized as an individual's perception of the impact of contracting out on himself. It is measured using a summative scale constructed by summing the responses to five questions and then dividing by five to obtain an average score. The Cronbach's alpha for the scale is 0.81, indicating a reliable scale. The questions ask respondents to indicate on a semantic differential scale their reactions to stimulus words and concepts in terms of ratings on bipolar scales defined with contrasting adjectives at each end. Semantic differential scales are a simple, economical means for obtaining data on people's reactions (Heise, 1970). The semantic differential scale used in this research asks respondents the following question: "This question presents opposite impacts that consultants may have had on GDOT employees. Please circle the number between the opposites that reflects the impact that consultants have had on you as a GDOT employee." The impacts include: workload, morale, motivation, productivity, and job success. *Job satisfaction* and *job security* are measured by asking respondents to indicate their response to the same question. These questions are adapted from Kakabadse and Kakabadse's article of outsourcing in the public services in which they measured public manager's perceptions of the outcomes of outsourcing using a similar differential scale for these variables (Kakabadse and Kakabadse, 2001).

Position represents the hierarchal position of the individual in the agency. It is measured by summing an individual's response to the following question: "Please indicate whether or not you have been involved with consultants in the past five years in the following roles: 1)

interaction with consultants on GDOT projects in a non-supervisory capacity; 2) direct supervision of consultants working on GDOT projects, but not in a project management capacity; 3) project management for GDOT projects involving consultants; 4) oversight of GDOT project managers that supervise consultants; and 5) handling contract development, audits or billing." The range of possible responses is zero for no responses to the questions or five for positive responses to each of the questions.

Tenure is operationalized as the number of years an individual has worked for the agency. It is measured using a single open-ended question: "Approximately how long have you worked for GDOT? ___ years." Respondents input the number of years they worked for GDOT. To normalize the data, I use the square root of the data.

Public service motivation is operationalized as an individual's predisposition to respond to motives grounded primarily in public institutions and organizations. It is measured using a 4-point Likert scale ranging from strongly disagree to strongly agree. Respondents were asked to indicate their response to the following question: "Please rate your level of agreement with the following statement: Meaningful public service is very important to me." The range of responses is zero to four. The wording of this question comes directly from Perry's work in assessing the construct reliability and validity of the public service motivation scale (Perry, 1996).

Involvement Factors

Information about contracting out represents an individual's perception of the amount of information he has about consultant use at the agency. It is measured using the response to the following question: "How accurately do the following phrases describe your experiences with consultants? I understand how the use of consultants fits within GDOT's strategic plan." Responses are measured using a 4-point Likert scale ranging from strongly agree to strongly disagree.

Participation in the decision-making process is the degree of involvement an individual has in making decision regarding consultant use at the agency. It is measured by the following question: “Please indicate the level of your involvement in the following activities when hiring a consultant: Identifying which projects will use consultants.” It is measured using a 4-point Likert scale ranging from highly involved to not at all involved.

Previous experiences with contracting out indicates how positive or negative an individual’s previous experiences with consultants has been. It is measured using the responses to the following question: “How accurately do the following phrases describe your experiences with consultants?: My experience with consultants has generally been positive.” It is measured using a 4-point Likert scale ranging from strongly agree to strongly disagree.

Competence Factors

Contracting self-efficacy is an individual’s level of competence in completing tasks related to consultant management. *Management support* is an individual’s perception of the amount of support he receives from management regarding consultant management. Respondents were asked, “How accurately do the following phrases describe your experiences with consultants? 1) Sometimes I don’t feel I have the necessary training to best manage consultants (*contracting self-efficacy*). 2) I get clear guidance and direction on how I should mange consultants (*management support*). Each of these variables is measured using a 4-point Likert scale ranging from strongly agree to strongly disagree.

Table 9: Independent Variables

Variable	Operationalization	Survey Questions	Measurement	Scale
CAREER PATH FACTORS				
Personal impact	Is an individuals' perception of the impact of contracting out on himself	This question presents opposite impacts that consultants may have had on GDOT employees. Please circle the number between the opposites that reflects the impact that consultants have had on you as a GDOT employee. *IV1a: lighter workload ----- heavier workload* *IV1b: higher morale ----- lower morale* *IV1c: higher motivation ----- lower motivation* *IV1d: higher productivity ----- lower productivity* *IV1e: higher job success ----- lower job success*	Measured using a 5-point semantic differential scale where 1 indicated the item on the left of the scale (e.g., higher workload) and 5 indicated the item on the right of the scale (e.g., heavier workload). I recoded the items such that lighter workload = 4 and heavier workload = 0.	A summative scale was constructed for personal impact by summing IV1a + IV1b + IV1c + IV1d + IV1e and dividing by 5. The Cronbach's alpha is 0.81, indicating a reliable scale.

Table 9 Continued

Job satisfaction	Is an individual's level of satisfaction with his job	This question presents opposite impacts that consultants may have had on GDOT employees. Please circle the number between the opposites that reflects the impact that consultants have had on you as a GDOT employee. *IV2: higher job satisfaction ----- lower job satisfaction*	Measured using a 5-point semantic differential scale where 1 indicated the item on the left of the scale (e.g., higher job satisfaction) and 5 indicated the item on the right of the scale (e.g., lower job satisfaction). I recoded the items such that higher job satisfaction = 4 and lower job satisfaction = 0.	n/a
Job security	Is an individual's perception of his level of job security	This question presents opposite impacts that consultants may have had on GDOT employees. Please circle the number between the opposites that reflects the impact that consultants have had on you as a GDOT employee. *IV3: higher job security ----- lower job security*	Measured using a 5-point semantic differential scale where 1 indicated the item on the left of the scale (e.g., higher job security) and 5 indicated the item on the right of the scale (e.g., lower job security). I recoded the items such that higher job security = 4 and lower job security = 0.	n/a

Table 9 Continued

Position	Represents the hierarchal position of the individual in the agency	Please indicate whether or not you have been involved with consultants in the past five years in the following roles: *IV4a: interaction with consultants on GDOT projects in a non-supervisory capacity* *IV4b: direct supervision of consultants working on GDOT projects, but not in a project management capacity* *IV4c: project management for GDOT projects involving consultants* *IV4d: oversight of GDOT project managers that supervise consultants* *IV4e: handling contract development, audits or billing*	Measured by indicating 0 if response left blank or 1 if response is indicated for each of IV4a –IV4e. Position is measured by summing the total number of positive responses, giving a range of 0→ 5 as possible values.	n/a
Tenure	Is the number of years an individual has worked for the agency	*IV5: Approximately how long have you worked for GDOT? ____ years*	Measured using the number of years. To normalize the data, I use the square root of the variable.	n/a

Table 9 Continued

Public service motivation	Is an individual's predisposition to respond to motives grounded primarily in public institutions and organizations	Please rate your level of agreement with the following statement: *IV6: Meaningful public service is very important to me.*	Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree). To fix for right skewed data, I recoded the variable into a dichotomous variable such that entries below the median of 3 are coded as a 0 and those above 3 are coded as 1.	n/a
INVOLVEMENT FACTORS				
Information about contracting out	Represents an individual's perception of the amount of information he has about consultant use at the agency	How accurately do the following phrases describe your experiences with consultants? *IV7: I understand how the use of consultants fits within GDOT's strategic plan*	Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree).	n/a
Participation in the decision-making process	Is the degree of involvement an individual has in making decisions regarding consultant use at the agency	Please indicate the level of your involvement in the following activities when hiring a consultant: *IV8: Identifying which projects will use consultants*	Measured using a 4-point Likert scale ranging from 3 (highly involved) to 0 (not at all involved).	n/a

Table 9 Continued

Previous experiences with contracting out	Indicates how positive or negative an individual's previous experiences with consultants has been	How accurately do the following phrases describe your experiences with consultants? *IV9: My experience with consultants has generally been positive*	Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree).	n/a
COMPETENCE FACTORS				
Contracting self-efficacy	Is an individual's level of competence in completing tasks related to consultant management	How accurately do the following phrases describe your experiences with consultants? *IV10: Sometimes I don't feel I have the necessary training to best manage consultants*	Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree). I recoded the items such that higher change self-efficacy = 3 and lower change self-efficacy = 0.	n/a
Management support	Is an individual's perception of the amount of support he receives from management regarding consultant management	How accurately do the following phrases describe your experiences with consultants? *IV11: I get clear guidance and direction on how I should manage consultants*	Measured using a 4-point Likert scale ranging from 3 (strongly agree) to 0 (strongly disagree).	n/a

Control Variables

Eight control variables are used in the statistical analysis. These are used to balance the effect of that control variable across respondents so that its effect is held constant when studying the relationship between the independent and the dependent variables. The eight control variables used in this analysis are sex, level of education, age, percentage of projects involving consultants, engineer, other technical, administrative, and location. Sex refers to whether the respondent is male or female. Level of education is the respondent's highest level of education. Age is the respondent's age. The percentage of projects involving consultants control variable indicates the percentage of a respondent's project that involve consultants.

Three control variables are included for the role the respondent has played in the agency. I created a dummy variable for each of these. The control variable for engineer indicates whether the respondent has served an engineering role such as a supervising construction engineers/inspectors; project manager for construction or preconstruction; or design engineer. The second role variable is for other technical roles the respondent may have played in the agency including acting as a project manager for other projects; consultant liaison; planner; information technology specialist; environmental and location specialist; or right of way specialist. The third role variable is for administrative positions that the respondent may have played in the agency including as an accountant; administrator; auditor; or legal advisor.

The control variable for location indicates whether the respondent is located at the GDOT headquarters office or a district level location. Controlling for location is important as most of GDOT's design engineers are housed in the preconstruction stovepipe within GDOT which is centrally located at the headquarters office. Most of the respondents at the district level are not design engineers. Their work is primarily construction related; therefore the impact of contracting out engineering design work to consultants is likely less disruptive to their daily work. I control for this by specifying whether a respondent is located at a GDOT district office across the state of

Georgia or whether the respondent is located in the Atlanta headquarters department. Table 10 presents a description of the measurement of each of the control variables used in the data analysis.

Table 10: Control Variables

Variable	Operationalization	Survey Questions	Measurement	Scale
Sex	Whether the respondent is male or female	*C1: What is your gender?* *__ male* *__ female*	Measured using a dichotomous variable where 0=female and 1=male	n/a
Level of education	Indicates the respondent's highest level of education	*C2: Please indicate your highest level of education:* *__ GED* *__ High school diploma* *__ Some college education* *__ Associates degree* *__ Undergraduate degree* *__ Graduate degree*	Measured from 0 to 5 where 0=GED, 1=high school diploma, 2=some college education, 3=associates degree, 4=undergraduate degree, 5=graduate degree	n/a
Age	Indicates the respondent's age	*C3: Which of the following categories best describes your age?* *__ under 30* *__ 30-35* *__ 36-45* *__ 46-55* *__ over 55*	Measured from 0 to 4 where 0=under 30, 1=30-35, 2=36-45, 3=46-55, and 4=over 55	n/a
Percentage of projects involving consultants	Indicates the percentage of a respondent's projects that involve consultants	*C4: How many projects are you involved in currently, whether or not they involve consultants?* __ *C5: Of these projects, how many hire consultants?* __	Measured as a percentage by dividing C5 by C4.	n/a

Table 10 Continued

Engineer role	Indicates whether the respondent has served in an engineering role in the agency	*C6: Which of the following activities describe all of the various roles you have played at GDOT?* *__ supervise construction engineer/inspector (ceis)* *__ project manager (construction)* *__ project manager (preconstruction)* *__ design engineer*	Measured using dummy variables for each of the roles where 1=yes and 0=no	n/a
Other technical role	Indicates whether the respondent has served in a technical role besides engineering in the agency	*C6: Which of the following activities describe all of the various roles you have played at GDOT?* *__ project manager (other)* *__ consultant liaison* *__ planner* *__ information technology specialist* *__ environmental and location specialist* *__ right of way specialist*	Measured using dummy variables for each of the roles where 1=yes and 0=no	n/a
Administrative role	Indicates whether the respondent has served in an administrative role in the agency	*C6: Which of the following activities describe all of the various roles you have played at GDOT?* *__ accountant* *__ administrator* *__ auditor* *__ legal advisor*	Measured using dummy variables for each of the roles where 1=yes and 0=no	n/a

Table 10 Continued

Location	Indicates whether the respondent is located at the headquarters office or a district level location	n/a	Indicated via a unique code on each respondent's survey	n/a

Data Descriptive Statistics

Table 11 presents the descriptive statistics for readiness for contracting and each of the independent variables. (A histogram to show the distribution of each of the variables is presented in Appendix A.) The responses for *readiness for contracting* are slightly left-skewed with a mean of 2.98 (range is 0 to 6). This can be interpreted that as a whole, employees at the Georgia Department of Transportation are not quite ready for the organizational changes brought about by increasing contracting out at the agency.

Several of the career path factors show slightly left-skewed data. The data for *personal impact* are also slightly left-skewed with a mean of 1.97 (range is 0-4), meaning that on average, employees at GDOT view the impact of contracting out on themselves negatively. A similar result is seen for *job satisfaction*. Respondents indicated that contracting out at the agency results in a low level of job satisfaction (mean is 1.88; range is 0-4). The same left-skewed result is seen for impacts of contracting out on perceptions of *job security* (mean is 1.73; range is 0-4).

As a whole, survey respondents indicated an above average *position* in the agency, meaning that respondents have been involved with managing consultants as well as managing projects that use consultants. This is consistent with the survey sample frame, given that the survey was administered to those within GDOT who have consultant management experience. Additionally, the variable for *tenure* shows that on average, respondents have worked for GDOT 15.61 years. The square root of tenure (used to normalize the data) shows a mean of 3.75 years. Survey respondents indicated a highly right-skewed response to the question asking about their level of *public service motivation*. Respondents averaged a score of 2.7 out of 3.0, meaning that the respondents have a high level of public service motivation. The data are recoded such that those below the median are rescored as a 0 and those above are a 1. This provides a mean of 0.72 for public service motivation, with a right skewed data set.

For the involvement factors, respondents indicate a mean of 1.63 (range is 0-3) for having *information about contracting out*. This result shows that on average, GDOT survey respondents have information about how contracting out fits within GDOT's operations. However, respondents indicate a slightly left-skewed average for *participation in the decision-making process*. This shows that respondents lean toward having a low degree of involvement in making decisions regarding consultant use at the agency. Despite this result, respondents indicate having a slightly positive mean for *previous experiences with the change*, meaning that respondents' previous experiences with consultants at GDOT has generally been positive.

Each of the variables for competence factors are right-skewed. *Contracting self-efficacy* has a mean of 1.89 (range is 0-3), indicating that respondents generally feel competent in completing tasks related to contracting out. Additionally, respondents perceive GDOT management as being supportive in their efforts to manage contracting out at the agency (the mean for *management support* is 1.58). Table 11 presents the descriptive statistics for the dependent variable and all independent variables in the model.

Table 11: Descriptive Statistics

Variable (range)	Mean (N)	Median	Standard deviation	Skewness (standard error)	Kurtosis (standard error)
Dependent Variables					
Readiness for contracting (0-6)	2.98 (219)	3.00	1.16	-.10 (.16)	-.58 (.33)
Career Path Factors					
Personal impact (0-4)	1.97 (215)	2.00	0.61	-.31 (.17)	.92 (.30)
Job satisfaction (0-4)	1.88 (216)	2.00	0.83	-.21 (.17)	.50 (.33)
Job security (0-4)	1.73 (216)	2.00	0.78	-.31 (.17)	.74 (.33)
Position (0-5)	2.86 (229)	3.00	1.34	-.08 (.16)	-.86 (.32)
Tenure (0-5.83)	3.75 (230)	4.00	1.24	-.37 (.16)	-.73 (.32)
Public service motivation (0-1)	.72 (225)	1.00	0.45	-1.01 (.16)	-.99 (.32)
Involvement Factors					
Information about contracting out (0-3)	1.63 (182)	2.00	0.91	-.50 (.18)	-.55 (.36)
Participation in the decision-making process (0-3)	1.46 (220)	1.00	1.14	.14 (.17)	-1.38 (.33)
Previous experiences with contracting out (0-3)	2.02 (216)	2.00	0.72	-.80 (.17)	1.25 (.33)
Competence Factors					
Contracting self-efficacy (0-3)	1.89 (199)	2.00	0.89	-.26 (.17)	-.87 (.34)
Management support (0-3)	1.58 (206)	2.00	0.87	-.33 (.17)	-.55 (.34)

Data Analysis Plan

I will determine if the independent variables have an effect on an individual's readiness for contracting using three steps. The first step is to measure whether any apparent relationship between the variables in the sample is a statistical accident caused by sampling error or whether the relationship is real and statistically significant. To do this, I will conduct cross-tabulation analysis and calculate the Pearson's chi-square statistic for each of the independent variables and readiness for contracting. The second step is to determine how strong a relationship exists between the independent variables identified in step one as being statistically significant and readiness for contracting. I will calculate the Pearson's correlation coefficient to determine how strong is the relationship and whether it is positive or negative. Finally, I will determine if a causal relationship exists between each of the independent variables and readiness for contracting using ordinary least squares multivariate regression analysis. Multiple regression is used to examine the relative contribution of the predictor variables on readiness for contracting.[9]

I will conduct three regressions. The first regression will regress the control variables, 11 predictor variables, and three interaction effects on the full readiness for contracting construct. To test for differences between the two dimensions of the readiness for contracting construct, two additional regression models will be tested. The second regression will regress the control variables, 11 predictor variables, and three interaction effects on the first dimension (an

[9] Other data analysis methods considered for this research include 1) hierarchical multiple regression and 2) seemingly unrelated regression analysis. 1) Hierarchical multiple regression analysis examines the influence of predictor variables in a sequential way, such that the relative importance of a predictor may be judged on the basis of how much it adds to the prediction of the dependent variable, over and above that which can be accounted for by the other predictor variables (Cohen and Cohen 1983). Hierarchical multiple regression is not appropriate for this research as hierarchical multiple regression focuses on the change in predictability associated with predictor variables entered in later steps over and above that contributed by predictor variables entered in earlier steps. I am not conducting my regressions in steps; instead I am conducting three separate regression models to see how my predictor variables predict the two dimensions of readiness for contracting differently. 2) Seemingly unrelated regression analysis explicitly accounts for correlation across equation disturbances in a set of regression models (Zellner, 1962). However, when the same set of predictor variables is used, seemingly unrelated regression analysis gives the same results in terms of coefficient estimates and their variances as separate OLS regressions (Zellner, 1963).

individual's beliefs, attitudes, and intentions regarding the extent to which contracting out is needed) of the readiness for contracting construct. The third regression will regress the control variables, 11 predictor variables, and three interaction effects on the second dimension (an individual's beliefs, attitudes, and intentions regarding the extent to which the organization has the capacity to successfully manage contracting out) of the readiness for contracting construct. The first regression will provide answers to the first research question: *What factors predict a government employee's readiness for contracting?* The second and third regressions will provide answers to the second research question: *Are there differences in the factors that predict the two dimensions of readiness for contracting? Do different factors predict an individual's beliefs, attitudes, and intentions regarding 1) the extent to which contracting out is needed and 2) the organization's capacity to successfully manage contracting out?*

Conducting the data analysis in these three steps will provide details beyond what could be determined using regression analysis alone. A relationship may still exist between independent variables and readiness for contracting even if the independent variables are not significant in the regression analysis. The variables may be related to readiness for contracting, but not necessarily be a factor that causes an individual's readiness for contracting. Using bivariate correlation analysis provides information about relationships between the independent variables and readiness for contracting beyond cause and effect. Bivariate correlation coefficients will show how strongly and in what direction (either positive or negative) variables in the model are related. Taken together, these three steps will provide information about the relationship of each of the independent variables with readiness for contracting and help build a conceptual framework for future research and for use by public management practitioners.

IRB Approval

I received a certificate for completion of Institutional Review Board training through Georgia Tech's Office of Research and Sponsored Programs on December 8, 2000. Because this

research involves human subjects, all research protocols related to the funded research study that generated the data that will be used for this study were submitted for approval to Georgia Tech's Institutional Review Board (IRB). The Georgia Tech IRB reviewed and approved the following research related instruments: the semi-structured interview protocol for the interview research and the project manager survey. Therefore, all research protocols used in this dissertation research have been approved by Georgia Tech's IRB.

Summary

This chapter presented a description of the research methods, data, measures, and data analysis plan to be used for this dissertation research. It provided a description of sample of project managers at the Georgia Department of Transportation and explained the project manager survey that is used as the primary source of data for this research. I followed with a description of how the dependent variable, independent variables, and control variables are measured as well as descriptive statistics for each. Next I presented my data analysis plan. Finally, I presented the Institutional Review Board approval for this research. Chapter 5 will provide the data analysis results.

CHAPTER 5:
DATA ANALYSIS RESULTS

Introduction

Chapter 5 presents the results of the data analysis from the Georgia Department of Transportation project manager survey. The relationships between each of the independent variables and the readiness for contracting dependent variable is examined using crosstabulation analysis, bivariate correlations, and regression analysis. The chapter concludes with a discussion of the results in terms of the specific hypotheses and explains the limitations of the data.

Crosstabulation Analysis

To determine whether any apparent relationship between the variables in the sample is a statistical accident caused by sampling error or whether the relationship is real and statistically significant, I used crosstabulation analysis. I use Pearson's chi-square statistic to calculate the probability that a relationship found in the sample between the independent variable and dependent variable is due to chance. The chi-square statistic measures this by assessing the difference between the actual frequencies in each cell in the table and the frequencies one would expect to find if there is not a relationship between the variables in the population. The larger the value of the chi-square statistic, the more that the values of the readiness for contracting variable are dependent on the values of each of the independent variables. (Appendix C provides the full results from the crosstabulation analysis.)

The results of the crosstabulation analysis are consistent with readiness for change theories for many of the independent variables being tested. Only the variables for position, public service motivation, contracting self efficacy, and the three interaction effects are not consistent with my hypotheses for the readiness for contracting model. These results indicate that a relationship between personal impact, job satisfaction, job security, tenure, information about contracting out, participation in the decision-making process, previous experiences with

contracting out, and management support and readiness for contracting can be ruled out as being due to chance.

Bivariate Correlation Analysis

The second step in the data analysis is to determine how strong a relationship exists between the independent variables and readiness for contracting. Bivariate correlation coefficients between each of the independent and dependent variables show how strongly and in what direction (either positive or negative) variables in the model are linearly related. Table 12 presents the correlation coefficients between the variables. As predicted, many of the independent variables are positively related to readiness for contracting. Personal impact, job satisfaction, job security, tenure, information about contracting out, participation in the decision-making process, previous experiences with contracting out, and management support are each positively related to readiness for contracting and are significant at the 0.01 level.

The bivariate correlation calculations also indicate significant correlations between several of the independent variables. However, none are correlated at the 0.8 level or above, which would indicate a problem of multicollinearity between variables. Multicollinearity is explored in detail in a following section.

Table 12: Bivariate Correlation Coefficients

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	**Readiness for contracting**	1														
Career Path Factors																
2	Personal impact	**.47****	1													
3	Job satisfaction	**.45****	**.78****	1												
4	Job security	**.34****	**.42****	**.37****	1											
5	Position	.11	.08	**.14***	.09	1										
6	Tenure	**.27****	.00	.08	.00	.00	1									
7	Public service motivation	.02	.06	.04	.00	.04	.08	1								
Involvement Factors																
8	Information about contracting out	**.62****	**.25****	**.31****	**.20****	.00	.13	.09	1							
9	Participation in the decision-making process	**.29****	**.31****	**.30****	.13	**.35****	**.20****	.02	**.16***	1						
10	Previous experiences with contracting out	**.43****	**.41****	**.41****	**.25****	.12	**.15***	.03	**.34****	**.32****	1					
Competence Factors																
11	Contracting self-efficacy	.12	**.15***	**.22****	.06	-.06	.14	-.06	.14	.06	.13	1				
12	Management support	**.48****	**.30****	**.41****	**.16***	-.06	.09	.02	**.51****	.04	**.29****	**.25****	1			
Interaction Effects																
13	Personal impact X position	-.07	.02	-.03	.05	-.09	**-.18****	.02	.02	-.08	-.06	-.07	.11	1	.10	**.19****

Table 12 Continued

14	Job security X tenure	-.01	.02	.03	-.08	**-.21**[**]	**.18**[**]	-.06	-.01	0	.09	**.20**[**]	.08	.10	1	.08
15	Participation in the decision-making process X previous experiences with contracting out	-.06	.20	-.03	-.09	-.06	-.02	-.06	-.05	.06	**-.19**[**]	.04	-.03	**.19**[**]	.08	1

[**] Correlation is significant at the 0.01 level (2-tailed)
[*] Correlation is significant at the 0.05 level (2-tailed)

Multiple Regression Analysis

The third step in the data analysis plan is to determine if causality exists between any of the independent variables and readiness for contracting. Multiple regression is used to examine the relative contribution of the predictor variables on readiness for contracting. Eight control, 11 predictor, and three interaction effect variables are used in the statistical analysis. Control variables are included to control for the influence of a respondents' sex, level of education, age, roles, and location (whether at the headquarters or a regional office). Additionally, I controlled for the percentage of a respondent's projects that use consultants to account for the level of contracting out experienced by the respondent. The predictor variables are personal impact, job satisfaction, job security, position, tenure, public service motivation, information about contracting out, participation in the decision-making process previous experiences with contracting out, contracting self-efficacy, and management support. The three interaction effects are for the interaction between personal impact and position, between job security and tenure, and between participation in the decision-making process and previous experiences with contracting out.

I use a centered score regression to reduce potential multicollinearity among the variables. This is particularly important since interaction terms are included in the model. Individual predictors are centered before their product term is computed. To center the variables, I subtracted the mean from each respondent's raw score. The interaction term is the product of the centered predictors. The centered scores (i.e., deviation scores) facilitate easier interpretation of regression models that include interaction effects. This procedure leaves each variable's standard deviation unchanged and has no impact on the slope of the interaction term. When used in a regression analysis, the standard error of the centered interaction term will not be affected (Aiken and West, 1991; Finney et al., 1984).

However, some argue that centering scores can produce systematically biased estimates of main effects (Katrichis, 1992). To ensure bias was not introduced into the model, I checked the scatterplots of interaction terms for both the raw score of the two variables and the deviation score of the two variables regressed on the readiness for contracting dependent variable. After the transformation to a centered score, the distribution of data points of the interaction variables on a scatterplot remain unchanged, but the mean changes to 0.

I conduct three separate multiple regression models. First, I conduct a regression on the dependent variable – readiness for contracting – which consists of two dimensions. The first dimension is an individuals' beliefs, attitudes and intentions regarding the extent to which contracting out is needed and the second dimension is an individual's beliefs, attitudes, and intentions regarding the extent to which the organization has the capacity to successfully manage contracting out. The readiness for contracting dependent variable is measured using the sum of the scores for these two dimensions. In the second multiple regression model, I use the first dimension of readiness for contracting (an individual's beliefs, attitudes, and intentions regarding the extent to which contracting out is needed) as the dependent variable. In the third multiple regression, I use the second dimension of readiness for contracting (an individual's beliefs, attitudes, and intentions regarding the organization's capacity to successfully manage contracting out) as the dependent variable. The purpose of conducting three separate regression analyses is to see whether the same factors contribute to both dimensions of the readiness for contracting construct or whether the two dimensions are affected by separate factors than the full readiness for contracting model which includes both dimensions.

Results for readiness for contracting as the dependent variable

The first multiple regression model uses readiness for contracting as the dependent variable which consists of the sum of the two dimensions: 1) the extent to which contracting out

is needed and 2) the extent to which the organization has the capacity to successfully manage contracting out. The model summary for this regression is presented below in Table 13.

Table 13: Results of Multiple Regression for Readiness for Contracting Model

R	R^2	Adjusted R^2	Standard error	df	F	Significance
.784	.615	.547	.716	22	9.135	.000
Independent variables		**Unstandardized regression coefficients**	**Standard error**	**Standardized regression coefficients**	**t**	**Significance**
Control Variables						
Age		-0.004	0.086	-0.003	-0.041	0.967
Education		***-0.127****	0.068	***-0.128****	-1.874	0.063
Sex		0.247	0.200	0.074	1.236	0.219
Location		0.078	0.177	0.036	0.441	0.660
Engineer role		-0.097	0.180	-0.038	-0.539	0.591
Other technical role		0.138	0.162	0.065	0.849	0.398
Administrative role		-0.185	0.158	-0.072	-1.170	0.244
Percentage of projects		0.032	0.090	0.020	0.358	0.721
Career Path Factors						
Personal impact		**0.574******	0.176	**0.321******	3.258	0.001
Job satisfaction		-0.128	0.124	-0.094	-1.030	0.305
Job security		0.122	0.091	0.089	1.336	0.184
Position		0.042	0.056	0.049	0.747	0.457
Tenure		***0.134****	0.076	***0.155****	1.762	0.081
Public service motivation		0.018	0.148	0.008	0.123	0.902
Involvement Factors						
Information about contracting out		**0.422******	0.084	**0.361******	5.035	0.000
Participation in the decision-making process		0.073	0.063	0.077	1.152	0.252
Previous experiences with contracting out		0.128	0.104	0.082	1.232	0.220
Competence Factors						
Contracting self-efficacy		-0.020	0.076	-0.016	-0.260	0.795
Management support		**0.226****	0.089	**0.188****	2.543	0.012
Interaction Effects						
Personal impact x position		-0.058	0.081	-0.043	-0.724	0.470
Job security x tenure		0.050	0.075	0.041	0.667	0.506
Participation in the decision-making process x previous experiences with contracting out		-0.012	0.089	-0.009	-0.138	0.890

**** Significant at the 0.001 level
*** Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.10 level

The overall model is significant. According to the adjusted R^2 value, the 22 variables used in the regression account for 54.7 percent of the explained variance in the model. The adjusted R^2 is a modification of R^2 that adjusts for the number of explanatory terms in a model. The adjusted R^2 statistic is used in this research as it adjusts for the fact that when one has a large number of independent variables, it is possible for the standard R^2 statistic to become artificially high simply because some independents' chance variations may explain small parts of the variation of the dependent variable.

Because the data are measured using different scales, I use the standardized coefficients for the regression results. These are the coefficients obtained by standardizing all of the variables in the regression, including the dependent and all of the independent variables, and running the regression. By standardizing the variables before running the regression, each of the variables is on the same scale. Standardized coefficients show the impact of a one standard deviation increase in each independent variable on readiness for contracting (measured in standard deviations of readiness for contracting), holding constant the other variables. This allows for the magnitude of the coefficients to be compared to see which one has more of an effect on readiness for contracting. I use 0.05 significance as the threshold for understanding which variables are significant in the model.

The results of the multiple regression show that as personal impact increases by one standard deviation, holding the other variables constant, we expect readiness for contracting to rise 0.321 standard deviations. As information about contracting out increases by one standard deviation, holding the other independent variables constant, readiness for contracting will rise 0.361 standard deviations. As management support increases by one standard deviation, holding the other independent variables constant, expected readiness for contracting increases 0.188 standard deviations. These results indicate that information about contracting has the most influence on readiness for contracting in the model. Each of these variables is significant at the 0.05 level. If we are slightly more lenient with the results, an individual's level of education and

tenure are also significant at the 0.10 level. However, because I am using a 0.05 significant level, only personal impact, information about contracting out, and management support are significant in this model. None of the interaction terms are significant in this regression model which means that none of the interaction terms tested in the model moderate the relationship of the independent variables with readiness for contracting.

To determine how much variation in readiness for contracting is uniquely explained by each of the three significant independent variables in the multiple regression, I subtract the adjusted coefficient of determination (R^2) for an equation excluding that independent variable from the adjusted R^2 (0.547) for the same equation including that independent variable. Table 14 presents the adjusted R^2 value for each significant independent variable.

Table 14: Coefficients of Determination for Readiness for Contracting Model

Independent Variable	Adjusted R^2
Career Path Factors	
Personal impact	0.034
Involvement Factors	
Information about contracting out	0.118
Competence Factors	
Management support	0.025

Table 14 shows that personal impact uniquely explains 3.4 percent of the variation in readiness for contracting in the regression. Information about contracting out uniquely explains 11.8 percent of the variation in readiness for contracting in the regression. Management support explains 2.5 percent of the variation in readiness for contracting. The explained variation that is not uniquely explained by personal impact, information about contracting, or management support is jointly explained by all 11 independent variables, three interaction effects, and eight control variables. Once again, information about contracting is shown to have the largest influence on readiness for contracting in the model.

The first dimension as the dependent variable

The second multiple regression model uses the first dimension of the readiness for contracting construct as the dependent variable. The first dimension is an individual's beliefs, attitudes, and intentions regarding the extent to which contracting out is needed. The results of the multiple regression model are presented below in Table 15.

Table 15: Results of Multiple Regression for the First Dimension

R	R^2	Adjusted R^2	Standard error	df	F	Significance
.734	.539	.458	.506	22	6.689	.000
Independent variables		**Unstandardized regression coefficients**	**Standard error**	**Standardized regression coefficients**	**t**	**Significance**
Control variables						
Age		0.030	0.060	0.044	0.498	0.619
Education		-0.056	0.048	-0.088	-1.174	0.243
Sex		0.213	0.141	0.099	1.506	0.134
Location		0.192	0.125	0.137	1.535	0.127
Engineer role		-0.097	0.127	-0.058	-0.759	0.449
Other technical role		0.075	0.115	0.054	0.654	0.515
Administrative role		-0.094	0.112	-0.056	-0.842	0.401
Percentage of projects		0.083	0.063	0.082	1.307	0.194
Career Path Factors						
Personal impact		**0.401*** **	0.124	**0.348*** **	3.226	0.002
Job satisfaction		-0.084	0.088	-0.096	-0.955	0.341
Job security		**0.208*** **	0.064	**0.235*** **	3.224	0.002
Position		0.010	0.040	0.018	0.244	0.807
Tenure		0.048	0.054	0.085	0.888	0.376
Public service motivation		-0.060	0.105	-0.039	-0.573	0.568
Involvement Factors						
Information about contracting out		**0.183*** **	0.059	**0.242*** **	3.088	0.002
Participation in the decision-making process		0.067	0.045	0.110	1.497	0.137
Previous experiences with contracting out		***0.133****	0.074	***0.132****	1.809	0.073
Competence Factors						
Contracting self-efficacy		-0.036	0.053	-0.046	-0.669	0.505
Management support		-0.047	0.063	-0.060	-0.746	0.457
Interaction Effects						
Personal impact x position		***-0.105****	0.057	***-0.120****	-1.852	0.066
Job security x tenure		0.025	0.053	0.031	0.465	0.643
Participation in the decision-making process x previous experiences with contracting out		-0.045	0.063	-0.049	-0.711	0.479

**** Significant at the 0.001 level
*** Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.10 level

The overall model is significant. According to the adjusted R^2 value, the 22 variables used in the regression account for 45.8 percent of the explained variance in the model. The results of the regression for the first dimension of the readiness for contracting construct are slightly different from the results of the regression for the overall readiness for contracting construct. Personal impact and information about contracting out are both significant in this model as well. However, job security is also significant at the 0.01 level in this model, while management support, while previously significant in the overall readiness for contracting model, is not significant when used as an independent variable in a model for the first dimension of readiness for contracting.

The results of the multiple regression show that as personal impact increases by one standard deviation, holding the other variables constant, we expect an individual's beliefs, attitudes, and intentions regarding the extent to which contracting out is needed to rise 0.348 standard deviations. As job security increases by one standard deviation, holding the other variables constant, we expect an individual's beliefs, attitudes, and intentions regarding the extent to which contracting out is needed to increase 0.235 standard deviations. As information about contracting out increases by one standard deviation, holding the other independent variables constant, the first dimension of readiness for contracting will rise 0.242 standard deviations. These results indicate that personal impact has the most influence on the first dimension of readiness for contracting in the model. Each of these three variables is significant at the 0.01 level.

If we are slightly more lenient with the results, an individual's previous experiences with contracting out and the interaction effect for personal impact and position are also significant at the 0.10 level. However, because I am using a 0.05 significant level, only personal impact, job security, and information about contracting out are significant in this model for the first dimension of readiness for contracting. The eight control variables, other test variables (job satisfaction, position, tenure, public service motivation, participation in the decision-making

process, previous experiences with contracting out, contracting self-efficacy, and management support), and three interaction effects are not significant in the model.

To determine how much variation in the first dimension of readiness for contracting is uniquely explained by each of the three predictor variables in the third step of the multiple regression, I subtract the coefficient of determination (R^2) for an equation excluding that variable from the coefficient of determination (0.458) for the same equation including that variable. Table 16 presents the adjusted R^2 value for each significant independent variable in the regression in which the extent to which contracting out is needed is used as the dependent variable.

Table 16: Coefficients of Determination for the First Dimension

Independent Variable	Adjusted R^2
Career Path Factors	
Personal impact	0.040
Job security	0.040
Involvement Factors	
Information about contracting out	0.036

Table 16 shows that personal impact uniquely explains 4.0 percent of the variation in the extent to which contracting out is needed in the regression. Job security also uniquely explains 4.0 percent of the variation in the first dimension of readiness for contracting. Information about contracting uniquely explains 3.6 percent of the variation in the extent to which contracting out is needed in the regression. The explained variation that is not uniquely explained by these three variables is jointly explained by all 11 independent variables, eight control variables, and three interaction effects. Personal impact and job security are shown to have the largest influence on the first dimension of readiness for contracting in the model. This means that if one were to attempt to influence an individual's beliefs, attitudes, and intentions regarding the extent to which contracting out is needed, then targeting that person's beliefs about the impact of contracting out on himself and on his job security would have more of an impact than if one provided an individual with more information about contracting out or any of the other predictor variables tested in this model.

The second dimension as the dependent variable

The third multiple regression model uses the second dimension of the readiness for contracting construct as the dependent variable. The second dimension is an individual's beliefs, attitudes, and intentions regarding the extent to which the organization has the capacity to successfully manage contracting out. The results of the multiple regression are presented below in Table 17.

Table 17: Results of Multiple Regression for the Second Dimension

R	R^2	Adjusted R^2	Standard error	df	F	Significance
.735	.540	.459	.481	22	6.719	.000

Independent variables	Unstandardized regression coefficients	Standard error	Standardized regression coefficients	t	Significance
Control variables					
Age	-0.034	0.057	-0.052	-0.586	0.559
Education	-0.071	0.045	-0.116	-1.557	0.122
Sex	0.034	0.134	0.017	0.256	0.798
Location	-0.114	0.119	-0.086	-0.958	0.340
Engineer role	-0.001	0.121	0.000	-0.004	0.996
Other technical role	0.063	0.109	0.048	0.577	0.565
Administrative role	-0.091	0.106	-0.057	-0.856	0.393
Percentage of projects	-0.051	0.060	-0.053	-0.842	0.402
Career Path Factors					
Personal impact	0.173	0.118	0.157	1.460	0.147
Job satisfaction	-0.044	0.083	-0.053	-0.529	0.598
Job security	-0.086	0.061	-0.102	-1.403	0.163
Position	0.032	0.038	0.062	0.855	0.394
Tenure	***0.086****	0.051	***0.162****	1.691	0.093
Public service motivation	0.078	0.100	0.053	0.786	0.433
Involvement Factors					
Information about contracting out	**0.239****	0.056	**0.333****	4.252	0.000
Participation in the decision-making process	0.006	0.043	0.010	0.141	0.888
Previous experiences with contracting out	-0.005	0.070	-0.005	-0.068	0.946
Competence Factors					
Contracting self-efficacy	0.016	0.051	0.022	0.316	0.753
Management support	**0.273****	0.060	**0.369****	4.574	0.000
Interaction Effects					
Personal impact x position	0.047	0.054	0.056	0.870	0.386
Job security x tenure	0.025	0.050	0.034	0.505	0.614
Participation in the decision-making process x previous experiences with contracting out	0.032	0.060	0.038	0.542	0.589

**** Significant at the 0.001 level
*** Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.10 level

The overall model is significant. According to the adjusted R^2 value, the 22 variables used in the regression account for 45.9 percent of the explained variance in the model. The results of the regression model for which an individual's beliefs, attitudes, and intentions regarding the extent to which the organization has the capacity to successfully manage contracting out is used as the dependent variable results in only two significant independent variables – information about contracting out and management support. These results differ from the regression for the first dimension of readiness for contracting which delineated personal impact, job security, and information about contracting out as significant variables. In this model for the second dimension of readiness for contracting, only one variable from these three shows up as significant -- information about contracting out – while management support is also significant.

The results of the multiple regression show that as information about contracting out increases by one standard deviation, holding the other variables constant, we expect an individual's beliefs, attitudes, and intentions regarding the extent to which the organization has the capacity to successfully manage contracting out to rise 0.333 standard deviations. As management support increases by one standard deviation, holding the other variables constant, we expect the second dimension of the readiness for contracting construct to increase 0.369 standard deviations. These results indicate that management support has the most influence on an individual's beliefs, attitudes, and intentions regarding the extent to which the organization has the capacity to successfully manage contracting out in the model. Each of these two variables is significant at the 0.001 level.

If we are slightly more lenient with the results, an individual's tenure is also significant at the 0.10 level. However, because I am using a 0.05 significant level, only information about contracting out and management support are significant in this model for the second dimension of readiness for contracting. The eight control variables, other test variables, and three interaction effects are not significant in the model.

To determine how much variation in the second dimension of readiness for contracting is uniquely explained by each of the two independent variables in the second multiple regression, I subtract the adjusted R^2 for an equation excluding that independent variable from the adjusted R^2 for the same equation including that independent variable (0.459). Table 18 presents the adjusted R^2 value for each significant independent variable in the regression in which the extent to which the organization has the capacity to successfully manage contracting out is used as the dependent variable.

Table 18: Coefficients of Determination for the Second Dimension

Independent Variable	Adjusted R^2
Involvement Factors	
Information about contracting out	0.110
Competence Factors	
Management support	0.085

Table 18 shows that information about contracting out uniquely explains 11.0 percent of the variation in an individual's beliefs, attitudes, and intentions regarding the extent to which the organization has the capacity to successfully manage contracting out in the regression. Management support uniquely explains 8.5 percent of the variation in the second dimension of readiness for contracting. The explained variation that is not uniquely explained by these two variables is jointly explained by all 11 independent variables, eight control variables, and three interaction effects. Information about contracting out is shown to have the largest influence on the second dimension of readiness for contracting in the model.

Research Questions and Hypotheses Results

This dissertation research sought to answer two research questions. First, what factors predict a government employee's readiness for contracting? Second, are there differences in the factors that predict the two dimensions of readiness for contracting? Do different factors predict an individual's beliefs, attitudes, and intentions regarding 1) the extent to which contracting is needed than 2) the organization's capacity to successfully manage contracting? Results from the crosstabulations, bivariate correlation analysis, and multiple regression presented in this chapter answer these questions. Table 19 summarizes the findings from the data analysis.

First, of the 11 career path, involvement, and competence factors tested to see whether they predict an individual's readiness for contracting, three factors are predictive of an individual's readiness for contracting. Interestingly, one factor from each of the career path, involvement, and competence factors is significant.

Table 19: Significant Relationships of Independent Variables with Readiness for Contracting

Variable	Pearson's chi-square statistic	Pearson's bivariate correlation	Readiness for contracting regression	Dimension 1 regression	Dimension 2 regression
Control Variables					
Age					
Education					
Sex					
Location					
Engineering role					
Other technical role					
Administrative role					
Percentage of projects					
Career Path Factors					
Personal Impact	✓	+	+	+	
Job Satisfaction	✓	+			
Job Security	✓	+		+	
Position					
Tenure	✓	+			
Public Service Motivation					
Involvement Factors					
Information about Contracting Out	✓	+	+	+	+
Participation in the Decision-Making Process	✓	+			
Previous Experiences with Contracting Out	✓	+			
Competence Factors					
Contracting Self-Efficacy					
Management Support	✓	+	+		+
Interaction Effects					
Personal Impact x Position					
Job Security x Tenure					
Participation in the Decision-Making Process x Previous Experiences with Contracting Out					

✓ Indicates a significant relationship exists

\+ Indicates a significant positive relationship exists

Personal Impact

Hypothesis 1a: A government manager who perceives the impact of contracting out on himself positively will report more readiness for contracting than a government manager who perceives the impact negatively.

Hypothesis 1b: The two dimensions of readiness for contracting will be positively affected by personal impact.

Hypothesis 1a is supported by the data. Results of the crosstabulations, correlation analysis, and multiple regression analysis support the proposition that an individual who perceives the impact of contracting out on himself positively will report more readiness for contracting than a government manager who perceives the impact negatively. The Pearson's chi-square statistic of 165.66 from the results of the crosstabulations analysis is significant at the .001 level which shows that the probability that a relationship found in the sample between personal impact and readiness for contracting is not due to chance. Personal impact and readiness for contracting are significantly positively correlated with a correlation coefficient of .47 ($p<.01$). The results of the regression analysis indicate that as personal impact increases by one standard deviation, holding the other variables constant, we expect readiness for contracting to rise 0.321 standard deviations ($p<.001$). The adjusted coefficient of determination for personal impact is 0.034 meaning that personal impact alone explains 3.4 percent of the variance in readiness for contracting.

Personal impact is significant for the first dimension of the readiness for contracting construct but not for the second dimension. This means that a government manager who perceives the impact of contracting out on himself positively will report a greater extent to which contracting out is needed than a government manager who perceives the impact negatively. However, a government manager who perceives the impact of contracting out on himself positively will not necessarily report a greater extent to which the organization has the capacity to successfully manage contracting out. This is an interesting result since it demonstrates that an

individual's perception of the impact of contracting out on himself is a greater predictor of his perception of the extent to which contracting out is needed than the extent to which the organization has the capacity to successfully manage contracting out. This is likely due to the fact that personal impact has to do with individual level issues such as workload, morale, and motivation which relate to the first dimension of the readiness for contracting construct of issues such as whether consultants are necessary to accomplish the organization's mission better than it relates to the second dimension's emphasis on the organization's capacity to manage consultants.

These findings strengthen results from previous organizational change research that says during organizational change processes, people ask themselves, "what is in it for me?" (Dalton and Gottlieb, 2003; Armenakis and Harris, 2002). When a person faces change, various attributes of the change and their relationships are brought to mind. These key attributes help to define the problem and give meaning to the change issue. With this meaning in mind, the individual forms a specific attitude toward the change (Lau and Woodman, 1995). If the individual views the change as having a positive impact on himself, then he is more likely to be supportive of the change (Devos et al., 2002; Schneider et al., 1996; Lazarus, 1991). On the other hand, if he views the organizational change as having a negative impact on himself, then he is likely to be unsupportive of the organizational change (Morrison and Brantner, 1992; Zwick, 2002).

In the context of increasing contracting out at the Georgia Department of Transportation, employees who perceive contracting out as beneficial to himself are more likely to be report being ready for the organizational changes brought about by increasing contracting out. On the other hand, those employees who hold a negative perception of the impacts of contracting out on himself are more likely to be non-supportive of the changes brought about by contracting out. The results of this finding are intuitive as individuals are less likely to support a change that hurts their self interests. Administrators at the Georgia Department of Transportation and other government agencies can use this information by working with employees to help shape their perceptions of contracting out as being positive to their self interests.

Job Satisfaction

Hypothesis 2a: Government managers who have a higher level of job satisfaction related to contracting out will report more readiness for contracting than those government managers who have a lower level of job satisfaction.

Hypothesis 2b: The two dimensions of readiness for contracting will be positively affected by job satisfaction.

Results from the crosstabulations and correlation analysis indicate that job satisfaction and readiness for contracting are positively related. The Pearson's chi-square statistic of 72.654 ($p<.001$) from the crosstabulations indicates that a relationship between job satisfaction and readiness for contracting cannot be ruled out due to chance. The correlation coefficient is 0.45 and is significant at the 0.01 level. However, the regression analysis for the full readiness for contracting construct does not indicate that job satisfaction can predict an individual's readiness for contracting as the regression coefficient is insignificant at the 0.05 level. This result demonstrates that although individuals who report a high level of job satisfaction may also report a high level of readiness for contracting, the two are simply related, but no cause and effect between the two constructs is confirmed. A similar result is found for the two dimensions of the readiness for contracting construct as neither dimension is significant for the job satisfaction variable.

The implication for government is that while improving an individual's degree of job satisfaction may have positive benefits for the organization, these efforts will do little to improve an individual's readiness for contracting. In the case of GDOT, management would be better served focusing on enhancing individuals' perspectives of the impact of contracting out on themselves.

Job Security

Hypothesis 3a: Government managers who perceive a higher level of job security related to contracting out will report more readiness for contracting than those government managers who perceive a lower level of job security.

Hypothesis 3b: The two dimensions of readiness for contracting will be positively affected by job security.

Results of this research indicate that an individual employee's level of job security is related to his readiness for contracting, but does not cause his readiness. The crosstabulations analysis indicates that a relationship between the variables can be ruled out as being due to chance (Pearson's chi-square = 46.651; $p<.01$). The correlation analysis indicates a positive relationship between job security and readiness for contracting (0.34; $p<.01$). However, the multiple regression does not support a causal relationship between the variables as the Beta for job security is insignificant for the full readiness for contracting construct. I use the accepted 0.05 significance level from social science research for testing relationships in the readiness for contracting model and therefore find a causal relationship between job security and readiness for contracting to be insignificant.

Nevertheless, job security is found to be a predictor of the first dimension of the readiness for contracting construct – the extent to which contracting out is needed – but not for the second dimension. The Beta for job security for the first dimension is 0.235 and it is significant at the .05 level. In a similar vein as the variable for personal impact, the relationship between job security and the extent to which contracting out is needed may be due to the way that a person perceives the impact of having more consultants to do the agency's work favorably on such things as his workload, morale, and motivational levels.

Future research may wish to explore the relationship between job security and readiness for contracting further. Government employees may perceive contracting out as not only threatening their security in holding a job at the organization, but also may be concerned about

threats to their job's features (Greenhalgh and Rosenblatt, 1984). For example, a GDOT engineer may be worried that his job may change from one consisting primarily of engineering design work, to instead changing to a job where he simply works as a contract administrator of consultants who now do the engineering design work. The employee may fear this shift in his daily work in addition to fears about losing his job entirely.

Position

Hypothesis 4a: Government managers with a higher rank in the agency will report more readiness for contracting than those government managers who have a lower rank in the agency.

Hypothesis 4b: The two dimensions of readiness for contracting will be positively affected by position.

The data do not support hypothesis 4a nor are either of the two dimensions of the readiness for contracting construct significant as stand alone dependent variables. Data analysis results from the crosstabulations, correlation analysis and regression analysis test insignificantly for a relationship between position and an individual's readiness for contracting. This may be due to the difficulty in assigning hierarchal rank to the GDOT survey respondents. Because an individual's measure for position was based on his response to questions about his level of consultant management, it is possible that this question did not effectively capture the hierarchal position of an individual within the agency. For example, a high level office head within GDOT may not respond positively to questions asking about his management of consultants at GDOT, despite overseeing individuals who interact with consultants on a frequent basis. It is possible that this question did not accurately capture an individual's rank position within GDOT. If this is the case, then it is not surprising to find that data analysis the results to not support the hypothesis about position. Future research should attempt to establish an individual's rank more closely to determine whether a significant relationship exists between position and readiness for contracting.

Tenure

Hypothesis 5a: Government managers with a longer tenure in the agency will report more readiness for contracting than those government managers who have a shorter tenure in the agency.

Hypothesis 5b: The two dimensions of readiness for contracting will be positively affected by tenure.

Data from this research support the proposition that a relationship exists between tenure and a person's readiness for contracting, but the data does not support a causal relationship between the two variables. Results from the crosstabulations analysis provide a significant Pearson's chi-square statistic of 57.312 ($p<.01$), meaning that a relationship due to chance can be ruled out. Results from the correlation analysis indicate that tenure and readiness for contracting are positively correlated with a coefficient of 0.27 ($p<.01$). However, the regression analysis provides insignificant Beta weights for tenure, indicating that a causal relationship between tenure and readiness for contracting does not exist. The same insignificant result is found for both of the separate dimensions of the readiness for contracting construct in the regression analysis.

The mean tenure for survey respondents is 15.61 years, with a range of responses from 6 months to 34 years. Previous studies based on career stage models have indicated that determinants of job attitudes change, depending on the particular stage of the career (Fry and Greenfield, 1980; Devos et al., 2002). Results from this research support previous research that tenure and readiness for organizational change are positively related, but do not indicate that tenure helps predict an employee's readiness for contracting. However, this research does not support previous research that concludes that employees with a longer tenure are *less* receptive to organizational change (e.g., Sinha et al., 2002; Beugelsdijk et al., 2002; Thompson and Van de Ven, 2002; Sorensen, 2000; Beck and Wilson, 2000). Instead it is supportive of findings that indicate tenure and readiness for contracting are positively related.

Previous research has also shown that employees with a longer tenure in an organization are more likely to be serving at higher positions within the organization (Walker and Enticott,

2004). Results from this research do not support this finding as the correlation analysis indicates an insignificant relationship between tenure and position in the agency. This may be due in part to consultant management roles played in GDOT as employees with a higher position may be less involved in the day-to-day management of consultants.

Public Service Motivation

Hypothesis 6a: Government managers with a stronger public service motivation will report more readiness for contracting than those government managers with a weaker public service motivation.

Hypothesis 6b: The two dimensions of readiness for contracting will be positively affected by public service motivation.

Results from the crosstabulations, correlation analysis, and the regression analysis do not support hypothesis 6a. Neither is public service motivation significant for either the first dimension or second dimension of the readiness for contracting construct as dependent variables. This may be due to the fact that the literature does not directly indicate that public service motivation is related to readiness for contracting. I used the construct of public service motivation in the model as it seemed to be similar to the construct of organizational commitment, which is proven to be related to readiness for organizational change. However, because hypothesis 6a and 6b were not supported, it is reasonable to assert that public service motivation does not fit well within models of an individual's readiness for organizational change or readiness for contracting. It is also possible that because my measure for public service motivation only includes one item from Perry's 24-item public service motivation scale (Perry, 1996), my measure does not accurately capture a person's public service motivation. Further research should assess whether using organizational commitment is effective as a potential predictor of an individual's readiness for contracting and use all of the items in Perry's 24-item scale for measuring a person's public service motivation.

Information about Contracting Out

Hypothesis 7a: Government managers who have more information about contracting out will report more readiness for contracting than those government managers who have less information about contracting out.

Hypothesis 7b: The two dimensions of readiness for contracting will be positively affected by information about contracting out.

The information about contracting out variable is significant for the full construct of readiness for contracting, as well as for each of the two dimensions when used separately as dependent variables in the model. The results indicate that having information about contracting out is positively related to an individual's readiness for contracting. Results from the crosstabulations, correlation analysis, and multiple regression support hypothesis 7a. The crosstabulations analysis indicates that the Pearson's chi-square is 101.170 ($p<.000$). The correlation coefficient for information about contracting out and readiness for contracting is 0.62 ($p<.01$), indicating a strong relationship between the two variables. Taken together, these statistics indicate that a positive relationship between information about contracting out and readiness for contracting exists and its existence can be ruled out as being due to chance.

Furthermore, the results of the multiple regression show that information about contracting out as a predictor variable in the readiness for contracting model is significant. Additionally, information about contracting explains the most variance in the readiness for contracting dependent variable with a standardized regression coefficient of 0.361 ($p<.001$). Information about contracting out explains 11.8 percent of the variance in readiness for contracting in the model.

When the readiness for contracting construct is broken down into its two separate dimensions, it is significant for both dimensions. However, it has a larger influence on the second dimension – the extent to which the organization has the capacity to successfully manage contracting out – than it does on the first dimension. The Beta for information about contracting

out for the first dimension is 0.242 ($p<.01$) and it explains 3.6% of the variance in an individual's beliefs, attitudes, and intentions regarding the extent to which contracting out is needed. An individual's perception of the amount of information he has about consultant use at the agency is a greater predictor of the second dimension, with a Beta of 0.333 ($p<.001$). Information about contracting out explains 11.0% of the variance in the second dimension as a dependent variable.

These results support the literature which points to the need for clear communication about organizational changes that affect employees (Armenakis and Harris, 2002; Kreitner and Kinicki, 2001; Miller et al., 1994). Although much of the research on providing information about organizational changes to employees is focused on private sector employees, the results of this dissertation research indicate that government employees who have information about an organizational change – in this case increasing contracting out of professional services – are more receptive to the organizational changes that result.

Participation in the Decision-Making Process

Hypothesis 8a: Government managers who participate more in the decision-making process of which projects are contracted out will report more readiness for contracting than those government managers who participate less in the decision-making process of which projects are contracted out.

Hypothesis 8b: The two dimensions of readiness for contracting will be positively affected by participation in the decision-making process.

Although the crosstabulations and correlation analysis find a positive relationship between participation in the decision-making process and readiness for contracting, this relationship is non-linear as the regression analysis results are insignificant for the full readiness for contracting construct as well as for each of the two dimensions. From the crosstabulations analysis, the Pearson's chi-square statistic is 33.371 ($p<.05$). The bivariate correlation coefficient is 0.29 ($p<.01$). However, the regression analysis yields an insignificant Beta for participation in the decision-making process. We can therefore conclude that participating in the decision-making

process about contracting out is related to but does not affect an individual's level of readiness for contracting at a government agency.

The implication of this finding is that having a broad array of government employees participate in decisions regarding contracting out in government is not important for increasing employees' readiness for contracting. Government can instead leave decisions regarding contracting out to those employees with the most expertise for making decisions about contracting within the agency. Instead government should focus its attentions with the general employee base on topics such as addressing concerns about the impact of contracting on the individual public servant or increasing communication about contracting at the organization, as indicated by findings that suggest an employee's readiness for contracting is most influenced by the information that he has about contracting out at the agency.

Previous Experiences with Contracting Out

Hypothesis 9a: Government managers who have more favorable previous experiences with contracting out will report more readiness for contracting than those government managers who have less favorable previous experiences with contracting out.

Hypothesis 9b: The two dimensions of readiness for contracting will be positively affected by previous experiences with contracting out.

Results of this research indicate a positive relationship between previous experiences with contracting out and readiness for contracting, but do not support a causal relationship between the two variables. The same result is found for each of the two dimensions of the readiness for contracting construct which also produce insignificant results for previous experiences with contracting out as an independent variable in the models.

The crosstabulation analysis results in a Pearson's chi-square statistic of 61.718 ($p<.001$). The correlation analysis indicates a positive relationship (0.43; $p<.01$) between previous experiences with contracting out and readiness for contracting. However, results from the regression analysis do not indicate a causal relationship between previous experiences with

contracting out and readiness for contracting. These results do not support research findings that show having had previous positive or negative experiences with the change will stimulate or hinder the employee's readiness for the change (Schneider et al., 1996; Brief and Guzzo, 1996).

Contracting Self-Efficacy

Hypothesis 10a: Government managers with higher self-efficacy in managing contracting out will report more readiness for contracting than those government managers with lower self-efficacy.

Hypothesis 10b: The two dimensions of readiness for contracting will be positively affected by contracting self-efficacy.

The data do not support hypothesis 10a. Neither the crosstabulations analysis nor correlation analysis indicate that a relationship exists between contracting self-efficacy and readiness for contracting. Similarly, the regression analysis results are insignificant for contracting self-efficacy as a predictor variable in the readiness for contracting model. Contracting self-efficacy is also an insignificant predictor for the two dimensions of the readiness for contracting construct when used in two separate models with each dimension as the dependent variable.

This result is surprising, given the large amount of research that points to the contrary about an individual's level of self efficacy and readiness for organizational change (e.g., McDonald and Siegall, 1992; Paglis and Green, 2002; Guterman and Bargal, 1996). However, it seems that increasing an individual's level of contracting self-efficacy through training efforts such as courses in contract administration, contract monitoring, and contract performance monitoring can only prove to help individual's manage contracts, even if contracting self-efficacy is not directly related to an individual's level of readiness for contracting.

Management Support

Hypothesis 11a: Government managers who perceive more management support related to contracting out will report more readiness for contracting than those government managers who perceive less management support.

Hypothesis 11b: The two dimensions of readiness for contracting will be positively affected by management support.

Hypothesis 11a is supported. Results from the crosstabulations, correlation analysis, and regression analysis indicate that management support and readiness for contracting are positively related. The crosstabulations provide a Pearson's chi-square statistic of 88.951 ($p<.000$) indicating that a relationship between management support and readiness for contracting exists and is not attributed to chance. The correlation coefficient between management support and readiness for contracting is .48 ($p<.01$).

Results of the multiple regression provide a standardized Beta weight of 0.188 that is significant at the .05 level. The adjusted coefficient of determination for management support is 0.025, indicating that management support explains 2.5 percent of the variance of readiness for contracting in the model. The results of this research support previous research that employees must perceive their management to be supportive in times of organizational change (Armenakis et al., 1993; Eby et al., 2000; Jones et al., 2005).

For hypothesis 11b, the two dimensions of the readiness for contracting construct are not equally affected by management support. Only the second dimension of the readiness for contracting construct – the extent to which the organization has the capacity to successfully manage contracting out – is significant. The first dimension does not result in a significant model. For the second dimension, the Beta for management support is 0.369 ($p<.001$) and it explains 8.5 percent of the variance in the model.

Interaction Effects

Hypothesis 12a:	Position will moderate the relationship between personal impact and readiness for contracting in such a way that the lower the position, the stronger the relationship.
Hypothesis 12b:	The two dimensions of readiness for contracting will be negatively affected by the interaction effect for personal impact and position.
Hypothesis 13a:	Tenure will moderate the relationship between job security and readiness for contracting in such a way that the longer the tenure, the stronger the relationship.
Hypothesis 13b:	The two dimensions of readiness for contracting will be positively affected by the interaction effect for tenure and job security.
Hypothesis 14a:	Previous experiences with contracting out will moderate the relationship between participation in the decision-making process and readiness for contracting in such a way that the more positive the previous experiences with contracting out, the stronger the relationship.
Hypothesis 14b:	The two dimensions of readiness for contracting will be positively affected by the interaction effect for participation in the decision-making process and previous experiences with contracting out.

None of the interaction effects are significant for neither the full construct of readiness for contracting nor each of the two dimensions separately. The crosstabulations, bivariate correlations, and multiple regression analysis all yield insignificant results for the three interaction effects and readiness for contracting. These results indicate that no significant interaction effects exist between personal impact and position, between job security and tenure, nor between participation in the decision-making process and previous experiences with contracting out. The joint effects of these variables do not produce any significant results above their separate effects on the models.

Summary of the Findings

Results of the data analysis support three of the hypotheses for the full construct of readiness for contracting. The data from the standardized regression coefficients and adjusted coefficients of determination indicate that having information about contracting out is the most

influential variable in the model for impacting his readiness for contracting out. Additionally, results indicate that the more an employee perceives the impact of contracting out on himself positively, the more he will report readiness for contracting. The next most influential variable in the model is personal impact. The research findings support the proposition that employees who perceive the impact of contracting out on themselves positively will also report a higher readiness for contracting. Similarly, an individual's perception of management support will also impact his readiness for contracting. The more management support an individual perceives, the more he or she will report a higher readiness for contracting.

The variables affect the two dimensions of the readiness for contracting construct differently. The first dimension – an individual's beliefs, attitudes, and intentions regarding the extent to which contracting out is needed – is positively predicted by personal impact, job security, and information about contracting out. The second dimension – an individual's beliefs, attitudes, and intentions regarding the organization's capacity to successfully manage contracting out – is predicted by information about contracting out and management support. Only information about contracting out is predictive of all three dependent variables. Chapter 6 will examine the meaning of these results and the implications for public policy theory and practice.

CHAPTER 6:
IMPLICATIONS AND CONCLUSIONS

Introduction

This final chapter provides a summary of the findings in light of the two research questions. It discusses the implications of the results for theory and for policy and practice. Based on the findings, recommendations are made for practitioners of contracting out in government. Next, limitations of the research are presented. Finally, this chapter concludes with suggestions for future research on readiness for contracting in government.

Conclusions about the Research Questions

The objective of this dissertation research was to identify and explain the factors that relate to employee readiness for contracting so that government agencies can more effectively address the implications of contracting on government employees. The results are discussed in terms of their theoretical contribution to the public policy literature and in relation to the practical importance of developing positive change attitudes among government employees if contracting out in government is to be successful.

The two research questions are:

1. **What factors predict a government employee's readiness for contracting?**
2. **Are there differences in the factors that predict the two dimensions of readiness for contracting? Do different factors predict an individual's beliefs, attitudes, and intentions regarding 1) the extent to which contracting is needed and 2) the organization's capacity to successfully manage contracting?**

Results from the data analysis are used to answer these two questions in the following sections.

Research Question 1

The first research question asked what factors predict a government employee's readiness for contracting. Of the 14 independent variables tested to see which significantly predicted an

individual employee's readiness for contracting, three are significant. An individual's perception of the impact of contracting out on himself, information about contracting out, and management support each are predictive of an individual's readiness for contracting. Of these three, information about contracting out is the most significant predictor of an individual's readiness for contracting in the Georgia Department of Transportation. Of the 11 other independent variables tested, none proved to be significant for predicting an individual's readiness for contracting. However, five of these are positively related to readiness for contracting, but are not predictive of the dependent variable. These are job satisfaction, job security, tenure, participation in the decision-making process, and previous experiences with contracting out.

Furthermore, none of the interaction effects proved to be significant in the model for readiness for contracting. The multiplicative terms for personal impact and position, job security and tenure, and participation in the decision-making process and previous experiences with contracting out are insignificant. The effect of each of these independent variables on readiness for contracting does not vary depending on the level of the other independent variable.

Research Question 2

The second research question asked whether there are differences in the factors that predict the two dimensions of readiness for contracting. Results from the multiple regressions indicate that factors do predict the two dimensions differently, as well as being different from the factors that predict the overall readiness for contracting dependent variable. The first dimension of the readiness for contracting construct – an individual's beliefs, attitudes, and intentions regarding the extent to which contracting out is needed – is predicted by personal impact, job security, and information about contracting out. The second dimension of the readiness for contracting dependent variable – an individual's beliefs, attitudes, and intentions regarding the organization's capacity to successfully manage contracting – is predicted by information about contracting out and management support.

With the exception of information about contracting out, these results indicate that different factors predict an individual's beliefs, attitudes, and intentions regarding the extent to which contracting is needed than those that predict an individual's beliefs, attitudes, and intentions regarding the organization's capacity to successfully manage contracting. Management and human resource departments in government agencies that are undergoing transformations as a result of increasing contracting out in the government agency may find this information useful as the prepare their employees for the resulting organizational changes. For example, if employees do not perceive that the agency should be contracting out additional work and are resistant to contracting out activities, then management in the government agency may find it useful to provide employees with information about how contracting out is beneficial to them as individual employees (personal impact); how it does not pose a threat to their job security (job security); and how it fits into the organization's operations (information about contracting out). However, if individual employees do not perceive the agency as having the organizational management capacity to successfully manage contracting out, then providing information on how it fits into the agency's operations (information about contracting out) and providing additional management support (management support) might prove beneficial. These tactics would help improve employees' readiness for contracting by separately addressing the two dimensions that together comprise an individual's readiness for contracting.

Implications for Theory

The results of this research for public policy theory are important for numerous reasons, including 1) development of a new construct; 2) refinement of a conceptual model; 3) emphasis on individual public servants; 4) demonstration of how organizational change theories can be used in the public sector; 5) examination of contracting of professional services in government; and 6) implications for current research on contracting out in government.

Development of a new construct

Most importantly, this dissertation research furthers theory and concept building for researchers of government contracting. I developed a readiness for contracting construct by modifying the readiness for organizational change theory from organizational change literature. This new construct is solidly based on two issues that continue to receive considerable attention in the public policy literature: 1) the extent to which contracting out is needed in government and 2) the capacity of government to successfully manage contracts with outside organizations. These two topics are analyzed at the organizational level in public policy research yet few, if any scholars bring these two concepts together. In my research, I bring these two bodies of work together using a theoretical bridge from organizational change theory. In doing so, I develop a new construct that will better inform our discussions about contracting out in government.

Of the 11 career path, involvement, and competence factors identified in the readiness for organizational change literature, only three (personal impact, information about contracting out, and management support) proved to be significant predictors of an individual government employee's readiness for contracting. Despite this low number of variables being identified as statistically significant, this dissertation research demonstrates the utility of a readiness for contracting construct. Much of the organizational change literature that discusses factors related to individuals is engaged only at the theoretical level (e.g., Dalton and Gottlieb, 2003; Zwick, 2002; Miller, Johnson, and Grau, 1994) and does not delve into statistical analysis. By conducting a statistical analysis using variables identified in theories from the readiness for organizational change literature, I am able to test these relationships to benefit both our understanding of the readiness for organizational change and the readiness for contracting theories. My findings confirm the results of previous studies in readiness for organizational change that find personal impact, information about contracting out, and management support as significant predictors of

an individual's readiness for organizational change while also proving their predictive power in readiness for contracting models.

Refinement of a conceptual model

I build a conceptual model for understanding the readiness for contracting construct based on factors identified in the organizational change literature as being important to understanding one's readiness for organizational change. The conceptual model for this research included three set of variables: 1) career path factors; 2) involvement factors; and 3) competence factors. However, only three of the independent variables used in the model proved to be significant for the readiness for contracting dependent variable. Interestingly, one variable from each of the three sets of factors proved to be significant. This finding suggests that career path, involvement, and competence factors are each important in understanding how an individual responds to increasing contracting out in a government agency. Taken together, the three significant factors account for 54.7 percent of the overall variance in readiness for contracting. Personal impact accounts for 3.4 percent of the variance; information about contracting out explains 11.8 percent of the variance; and management support explains 2.5 percent of the variance. A revised model for predicting readiness for contracting includes these three predictor variables, as exemplified in Figure 5.

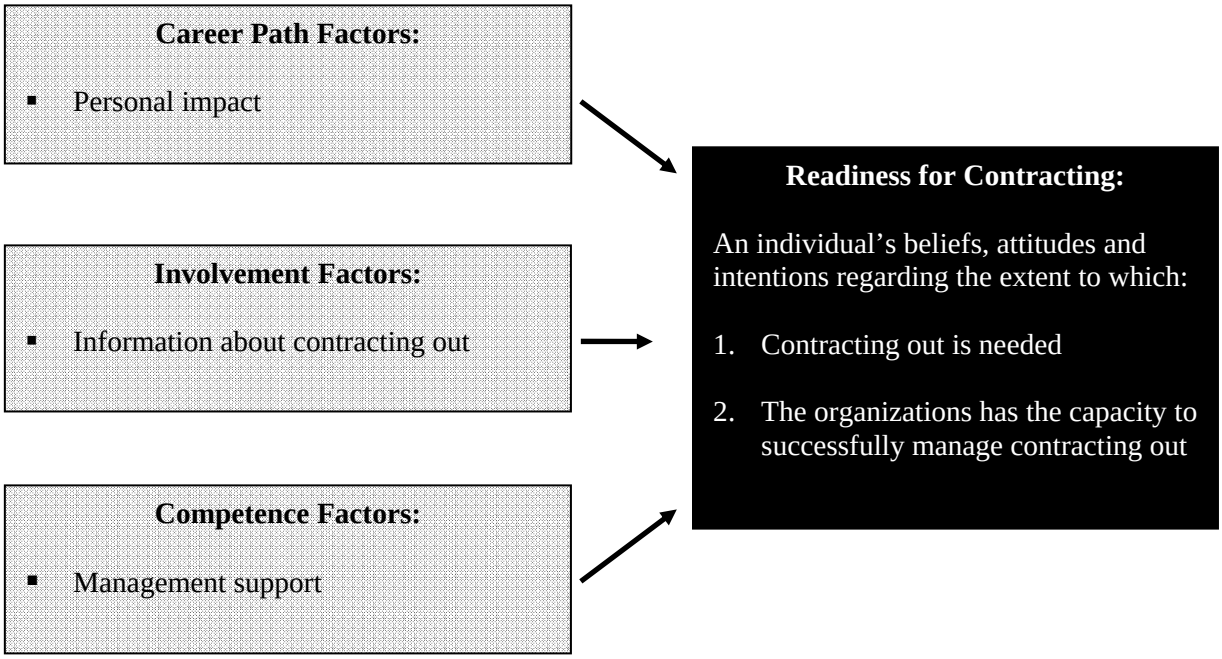

Figure 5: Revised Conceptual Framework

Emphasis on individual public servants

One major contribution of this work is the emphasis on the importance of assessing individual employees in government organizations in the context of contracting out. The results of this research show that individual-level factors matter when considering how a government organization should prepare itself for increasing contracting out. The implications of these findings for research in public policy is that individual-level factors are shown to be predictive of an individual's readiness for the organizational changes brought about by increasing contracting out in government. If organizational change theorists are correct in saying that successful organizational change is dependent on the individuals responsible for implementing that change (Reichers et al., 1997; Backer, 1995), then researchers of government contracting should also pay more attention to the individuals responsible for managing government contracts. The results of this particular dissertation research provide a foundation on which to further pursue research at the individual level of contracting out in government.

Demonstration of organizational change theories in the public sector

This dissertation research makes an additional contribution to the literature by bringing together organizational change theories with current research on government contracting, as Fernandez and Rainey (2006) suggest more public policy research must do (Fernandez and Rainey, 2006). Although the variables used in this research come from theories in the organizational change literature, several are to some extent discussed in the literature on contracting out as well. For example, during privatization of a water authority, researchers examined the impact on government employees' level of job satisfaction (Nelson, Cooper, and Jackson, 1995). Job security is discussed in several government reports that are concerned about the impact increased government privatization may have on the careers of individual government employees (U.S. Department of Labor, 1989; U.S. General Accounting Office, 1996).

Additionally, management support is examined in a study of contracting in an urban housing authority in the United Kingdom (Iwi et al., 1998). This dissertation research takes these studies a step further and demonstrated how a theory from organizational change literature – readiness for organizational change – could be adapted and used to study the phenomenon of government contracting of professional services.

The results of this research support previous research findings in organizational change research in the private sector but also show that organizational change in the context of government is different. Results of this research support findings from previous research on organizational change by finding that the perceptions of individual employees of the impact of contracting out on themselves is positively related to readiness for contracting. This study also supports previous research that finds that individuals with more information about the change (i.e., information about contracting out) and management support will report more readiness for the resulting organizational changes.

Examination of contracting out of professional services

Most research on government contracting focuses on commonly outsourced government services such as trash collection, road maintenance, and similar non-professional services. As such, much of our understanding in public policy research on government contracting is limited as it does not account for the work of professional employees who make careers in government. These employees employed in professional fields expect to receive more gratification from their work (Kleingartner, 1973) and their career trajectories are impacted differently than their non-professional public servant counterparts. Because the work of professionals in government is also contracted out, this dissertation research points to the need to give equal attention in public policy research to the contracted out work of this subset of public servants.

Implications for current research on contracting out

Another contribution of this research for public policy is that it has implications for ongoing research on contracting out and management capacity literature. Much of the extant literature on the capacity of government to manage contracting out focuses at the organizational level (e.g., Kettl, 1993b; Van Slyke, 2003; Romzek and Johnston, 2002). Few studies examine how ready individual employees are to take on the tasks associated with contracting out. This dissertation research emphasizes the need to probe deeper into government organizations and examine individual employees – not only their observable skills in managing contracts but also their unobservable psychological factors that may help or hinder their daily work in managing contracts.

An interesting finding from this research is that the second dimension of the readiness for contracting construct – an individual's beliefs, attitudes and intentions regarding the extent to which the organization has the capacity to successfully manage contracting out – is predicted by an individual's perception of the amount of information he has about consultant use at the agency (information about contracting out) and by an individual's perception of the amount of support he receives from management regarding consultant management (management support). Of the 11 variables tested in my research, information about contracting out and management support are the two most closely tied to the concept of management capacity. Their demonstrated predictive power for this second dimension of the readiness for contracting construct indicates just how important the concept of management capacity is in research on contracting out at both an organizational level (i.e. building organizational capacity to manage contracting out) and at the individual level (i.e. providing information and support to individual employees engaged in contracting out at the agency).

Furthermore, this research pointed out how limited our current view of contracting out is. Rather than focusing on a simplified view of contracting out, I suggest dismantling the black box of contracting out to examine its individual processes further.

Implications for Policy and Practice

A key implication of this research is the finding that it would be invaluable to public managers to assess the readiness for contracting of government employees who are undergoing or about to undergo changes from increasing contracting out of government work. Some studies indicate that 25-40 percent of the workforce will likely respond cynically to an announcement of a planned change (Reichers et al., 1997). With this in mind, government agency heads should focus on ways to positively impact individual employees' readiness for contracting.

In order for organizational leaders to motivate and prepare their employees for organizational changes, they must understand how to assess and create readiness for change among their employees (Cummings and Worley, 1997). Public managers can borrow from organizational change theorists who have developed instruments to assess individual employees' readiness for organizational changes. Public managers could adopt these instruments for the context of contracting out in government, specifically assessing the three factors that are clearly predictive of government employees' readiness for contracting – personal impact, information about contracting out, and management support.

Results from the data analysis of the readiness for contracting model provide details on factors that impact public servants' readiness for the organizational changes brought about by increasing contracting out in government. Identification of these factors leads to several suggestions for making the change toward contracting out in government more palatable for government employees. Because employees are the crux of ensuring the success of any change (Bommer, Rich, and Rubin, 2005), managers and administrators in government could ease the transition toward contracting by employing the following suggestions.

1. Communicate a Need for Contracting Out

Establishing and communicating a need to change is one of the first important steps to follow in implementing change (Armenakis & Bedeian, 1999; Galpin, 1996; Judson, 1991; Kotter, 1995). Administrators at the Georgia Department of Transportation and other agencies undergoing increasing contracting out should address the issue of contracting directly with their employees. Explaining to employees why GDOT is increasingly using consultants for government work would help them understand this use and potentially react more favorably towards consultants. This would result in employees with a higher level of readiness for contracting and consequently, more productive management of consultants since GDOT employees would be more "on board" with the use of consultants.

2. Address Employee Concerns about Potential Negative Impacts on Employees

Next, heads of government departments should directly address employee concerns about the potentially negative impacts of contracting out on the individual employee. In this research, perceptions of the personal impact on the employee were found to be significantly related to an individual employee's readiness for contracting. Ignoring these concerns may prove to intensify the concerns, thereby further reducing an employee's readiness. Instead, managers in government should talk with their employees about their concerns for their personal well-being.

Government management should provide opportunities for employees to express their feelings and receive validation and assurance (Reichers et al., 1997). Such actions are taken to help ensure employee support for the change (Armenakis et al., 1993). They should attempt to understand the impact of contracting out from the employee's perspective and address their fears. This may help them let go of their concerns and increase the successful management of contracts at the agency (Callan, 1993). Additionally, government organizations should focus reward systems within the agency such that efforts in support of effective management of contracting out

are rewarded (Schneider et al., 1996). This reward system would help individuals perceive the impact of contracting out on themselves more favorably as they would realize positive outcomes for supporting the management of government contracts. People do what they are rewarded for doing (Burke and Litwin, 1992).

3. Provide Management Support

A third suggestion for government undergoing a shift toward increasing contracting out is that management within government departments should make a concerted effort to be supportive of their employees who are managing consultants. Management support has been repeatedly proven to be a factor in the success of organizational change efforts (Armenakis et al., 1993; Eby et al., 2000; Fox et al., 1988) including in this dissertation research on readiness for contracting. Management can be supportive through a number of ways including providing clear guidance on what projects should use consultants, helping sort through administrative issues that develop, and providing leadership on effective ways to manage consultants. Furthermore, management within government departments should explain past failures with contracting to government employees within the agency (Reichers et al., 1997). By examining why those previous experiences were negative and taking steps to overcome the potential difficulties with contracting, employees may then develop an understanding of what went wrong and what steps they can take to improve their experiences with consultants. This would result in employees with a higher readiness for contracting and subsequently, more effective contracting for government.

Limitations of the Research

Concerns about Generalizability

The principal limitation of this research is that the results are limited in their generalizability as the study is an analysis of only one state transportation agency. The seriousness of this limitation depends on the research question and nature of variables under

consideration (Cramptom and Wagner, 1994). Despite being from one organization only, respondents were selected from different occupational groupings (e.g., administrative, construction, preconstruction, legal). Other agencies may have various environmental factors at play that affect their management of contracting out differently from the case of the Georgia Department of Transportation.

What is gained by this approach, however, is that it reduces uncertainty of some contextual effects that can arise in cross-sectional surveys. By using the context of the Georgia Department of Transportation in this research, I was able to explain what is going on inside the organization in relation to individual employees and contracting out professional services. This interior view allowed me to assess how individual employees are reacting to change and the factors that precipitated those reactions. Studying one organization only allows for control over differences in organizational management systems, policies and procedures, and culture. Additionally, in the readiness for organizational change literature many studies focus on one organization only. For example, Cunningham et al examine employees in one hospital setting undergoing change (Cunningham et al., 2002). Consequently, the approach of studying one organization only in organizational change studies is common practice. This research also assumes that the public managers surveyed and interviewed are representative of the Georgia Department of Transportation. Additionally, it assumes that these managers are primarily responsible for managing contracting within the agency.

Perceptual Nature of the Data

Another concern about the data is that the central variable of interest – readiness for contracting – is by definition perceptual, leaving few options but to obtain such information via self report. However, the use of self-report data poses the threat of common method variance (Podsakoff and Organ, 1986) which may present inflated correlations between study variables (Cook and Campbell, 1979). In defense of the utility of self-report data, however, Howard (1994)

and Spector (1994) suggest that self report data provides useful information and a valid first step in studying inter-relationships between organizational constructs.

Suggestions for Further Research

As many scholars have demonstrated, implementing public programs can be difficult as there are numerous factors at play (Mazmanian and Sabatier, 1989; Pressman and Wildavsky, 1973; O'Toole, 1996; Bardach, 1977). Consequently, the government's administrative structures and arrangements are conceptualized as a black box through which inputs are transformed into outputs and outcomes (Easton, 1965). In this research, the black box of contracting out includes the activities individual employees engage in during the course of managing contracts with the private sector (Coggburn and Schneider, 2003). Letting the contract is just the beginning of managing contracting out (Allen and Chandrashkar, 2000) as government employees must perform administrative activities such as monitoring contractors, paying invoices, and completing paperwork. The reality of government contracting is that the process is far more complicated by the than the simple 3-step process outlined by Brown and Potoski (2003), as indicated by GDOT's 25-step contracting process (Figure 4). These behaviors are typically rather difficult to analyze empirically as they are conducted during government employees' day-to-day activities.

Despite these difficulties in researching the management of government contracts, future research should look at the day-to-day management of contracts by public servants and research additional factors that impact employee readiness for contracting. There may be other factors at play than those identified in the current literature, especially given that the model used in this study accounts for 54.7 percent of the variance in readiness for contracting. This means that there is an additional 45.3 percent of the variance in readiness for contracting to be determined by other factors. Researchers in contracting out in government should seek to identify these other factors and continue to expand on the model developed for this dissertation research.

In conducting future research on contracting out, I suggest that public policy researchers apply theories from organizational change research, as suggested by Fernandez and Rainey (2006), such as the theory of readiness for organizational change that is used in this research. Other potential theories related to organizational change in government are presented in Table 1 and include cynicism about organizational change and resistance to organizational change. In light of this, I also suggest that public policy researchers heed the advice of organizational change theorists who stress the importance of individuals in understanding organizational changes, such as contracting out in government. If individuals are critical to the success of change initiatives, then public policy scholars must begin to pay more attention to the role of individuals in contracting out.

When conducting future research on readiness for contracting, I would suggest that future research explore changes at more than one organization. Wanous, Reichers and Austin also suggest that research in readiness for organizational change from multiple public organizations across domain areas would be useful (Wanous et al., 2000). Future researchers could also study multiple organizations undergoing similar change processes due to increasing contracting out and assess whether findings from this dissertation research are generalizable across multiple government organizations and domains. While this research on the Georgia Department of Transportation is limited in its generalizability to other government organizations since it is a study of only one organization, studying one organization extensively did allow for control over organizational differences. This dissertation research provides a foundation on which to base future work in this area.

One additional suggestion for future research would be to gauge the relationship between an individual's readiness for contracting and the outcomes of contracting out. For example, how does an individual employee's readiness for contracting affect his management of those contracts? Are employees who report more readiness for contracting doing a better job of managing those contracts? Does this result in overall improved government performance?

Future research on contracting out in government can benefit from the theoretical and practical implications of the findings of this dissertation research. Both researchers and practitioners should pay more attention to the role of the individual employee in contracting out and directly address the issue of how increasing contracting out affects individual employees. Steps should be taken to limit individual's negative perceptions of the impacts of contracting out on the individual, especially if these perceptions are unfounded. Finally, public policy scholars researching individual employees in contracting out should work to ensure that the benefits of this research are applied in government settings.

EPILOGUE

The research contract between the Georgia Department of Transportation and the Georgia Institute of Technology (Georgia Tech) served as the vehicle for data collection for this dissertation research. The GDOT employee survey which serves as the primary data tool for this dissertation provides only a snapshot in time of the case of contracting out at the Georgia Department of Transportation. However, GDOT has made numerous organizational changes due in part to the results from the consultant management contract that it had with Georgia Tech.

These results are not used as a part of this dissertation research, but are interesting as they demonstrate that continuing effects of increasing contracting out at the agency and the organizational adaptations that the agency is undertaking as a result. The also show how GDOT is employing many of the recommendations made by the Georgia Tech consulting team to improve consultant management at the agency. For example, GDOT's Office of Consultant Design has been reorganized so that it now includes several sub-units that address particular aspects of contracting out such as deciding which projects to contract out, negotiating between the consultants and GDOT, and hiring additional procurement specialists who are assigned to work with consultants. Furthermore, GDOT has established additional consulting contracts focused on consultant management with Georgia Tech in an effort to continue its attempts to improve its operations and management of consulting contracts with the private sector.

APPENDIX A: NORMALITY OF THE DATA

A histogram for the dependent variable and each of the independent variables indicates approximate normality of the data. Figures 6 through 17 present the distribution of each of the variables.

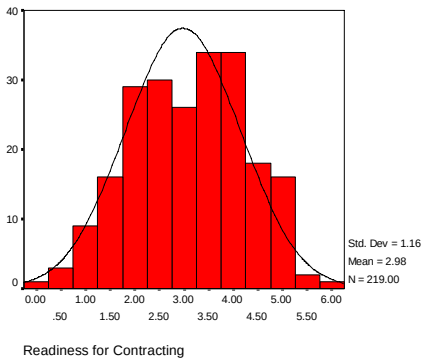

Figure 6: Distribution of Readiness for Contracting

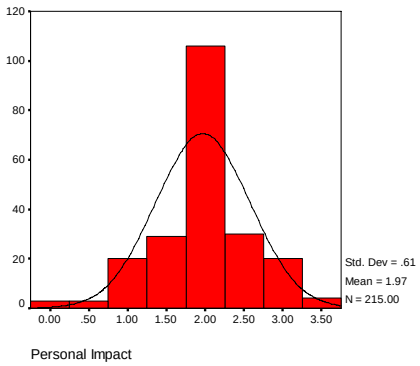

Figure 7: Distribution of Personal Impact

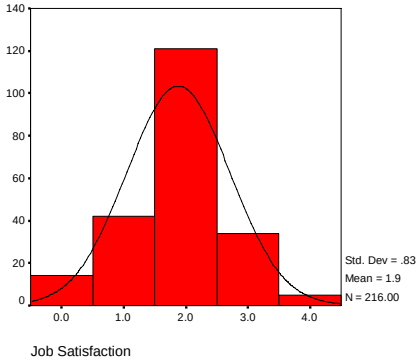

Figure 8: Distribution of Job Satisfaction

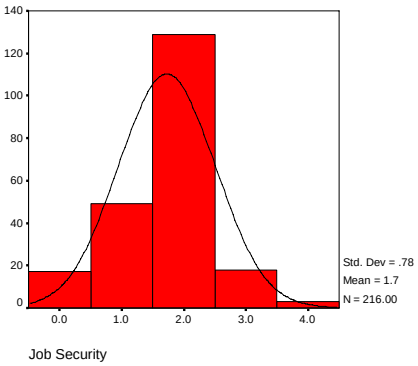

Figure 9: Distribution of Job Security

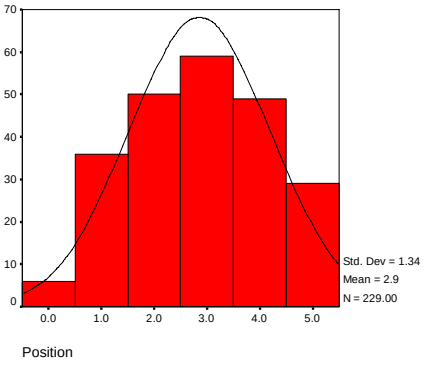

Figure 10: Distribution of Position

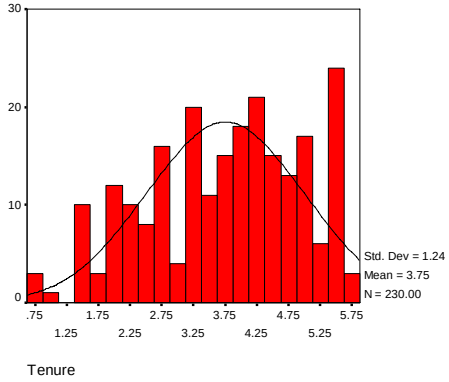

Figure 11: Distribution of Tenure

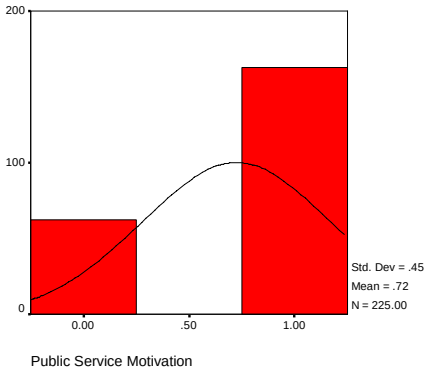

Figure 12: Distribution of Public Service Motivation

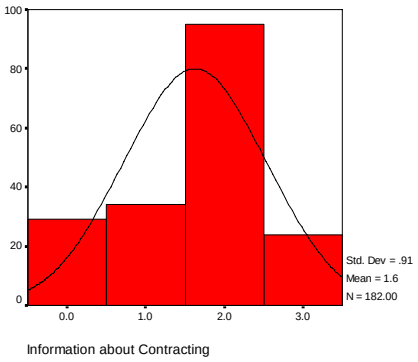

Figure 13: Distribution of Information about Contracting

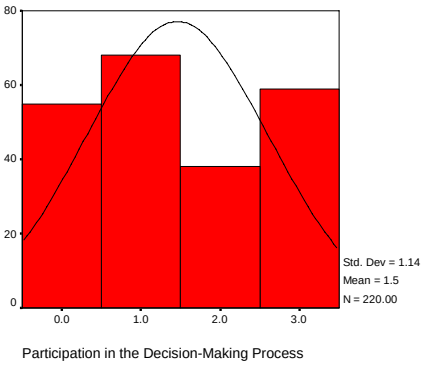

Figure 14: Distribution of Participation in the Decision-Making Process

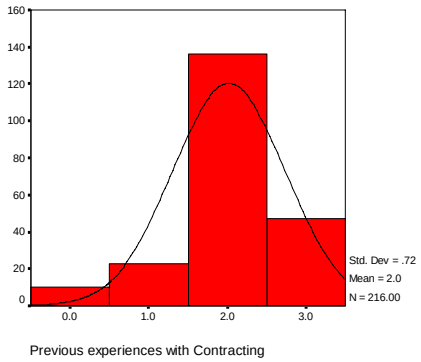

Figure 15: Distribution of Previous Experiences with Contracting

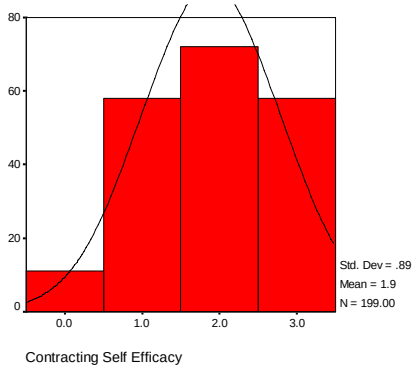

Figure 16: Distribution of Contracting Self-Efficacy

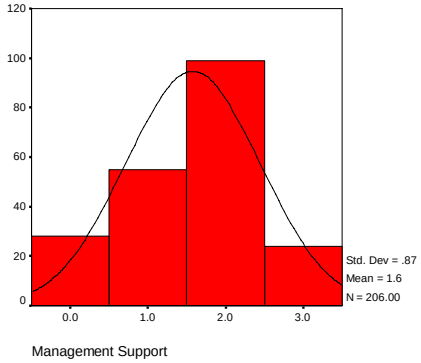

Figure 17: Distribution of Management Support

As these histograms indicate, most of the variables appear to be normally distributed, with a few exceptions. I attempted to further normalize the readiness for contracting variable using a variety of transforming techniques, including transforming using the square root, logarithm, and inverse (Tabachnick and Fidell, 1996). However, none of the methods transformed the data to a more normal distribution beyond its current state. I normalized the data for tenure by taking the square root of the number of years that an individual has worked for the agency. The other variables are approximately normal in their current state.

Table 11 also presents the skewness and kurtosis of the variables in order to assess the normality of the data. Skewness is the tilt in a distribution. A perfectly normal distribution will have a skewness statistic of zero. The skewness value for public service motivation is slightly above a value of 1.0, which may indicate a problem with the normality of the data. Kurtosis is the peakedness of a distribution. Negative kurtosis indicates too many cases in the tails of the distribution. Positive kurtosis indicates too few cases in the tails. The negative skewness value of -1.38 for participation in the decision-making process and the positive skewness value of 1.25 for previous experiences with contracting may indicate problems of normality with the data for these variables.

However, in conducting regression analysis, the normality of the residuals is more important than the normality of the raw data. To assess the distribution of the residuals for each of the variables, I conduct a quantile-quantile (Q-Q) plot which is a scatterplot of the residuals versus the expected normal distribution. The horizontal axis shows the location of the points as observed in the distribution. The vertical axis shows the location of the points as expected if the distribution were normal. If the observed and expected distribution is perfectly normal, a diagonal straight line will result. I present the normal probability plots for the variables in Figures 18 through 29.

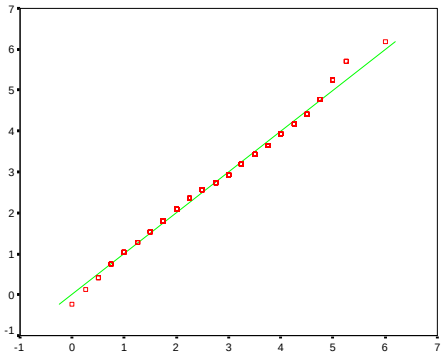

Figure 18: Normal Q-Q Plot of Readiness for Contracting

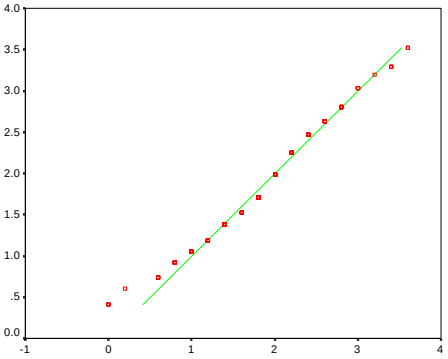

Figure 19: Normal Q-Q Plot of Personal Impact

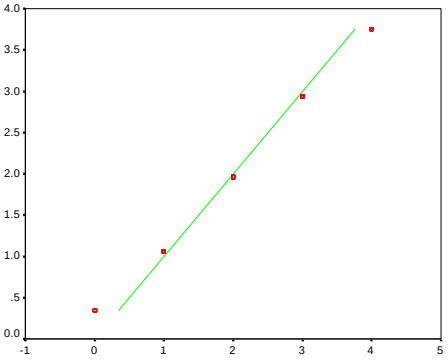

Figure 20: Normal Q-Q Plot of Job Satisfaction

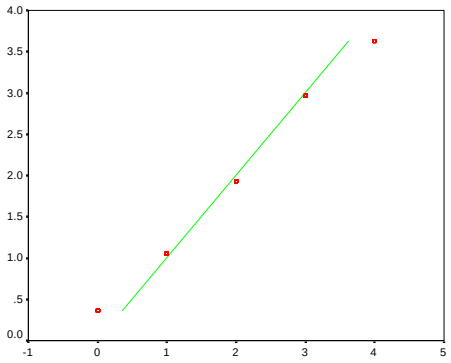

Figure 21: Normal Q-Q Plot of Job Security

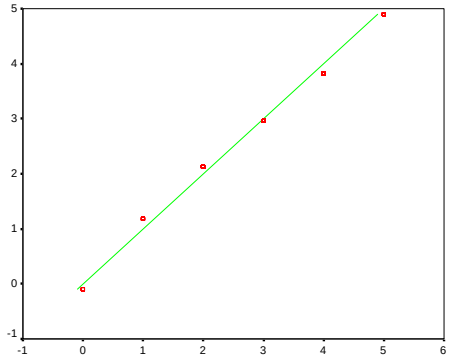

Figure 22: Normal Q-Q Plot of Position

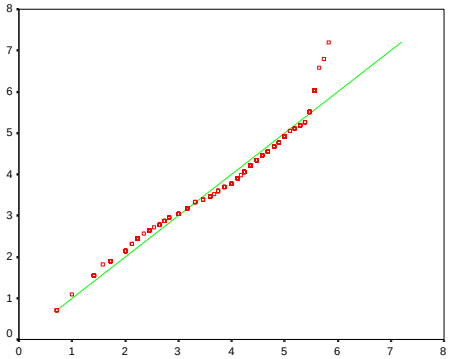

Figure 23: Normal Q-Q Plot of Tenure

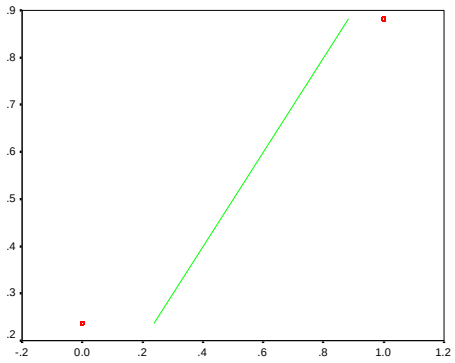

Figure 24: Normal Q-Q Plot of Public Service Motivation

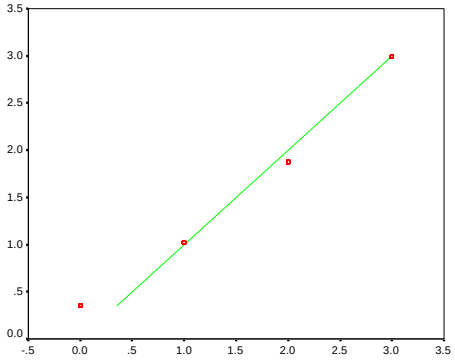

Figure 25: Normal Q-Q Plot of Information about Contracting

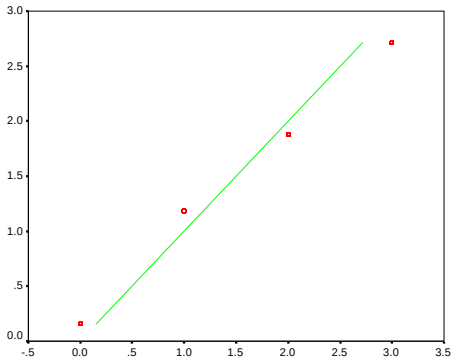

Figure 26: Normal Q-Q Plot of Participation in the Decision-Making Process

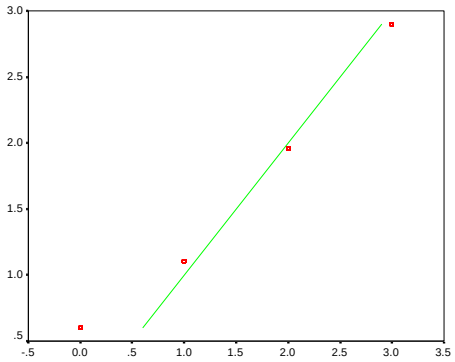

Figure 27: Normal Q-Q Plot of Previous Experiences with Contracting

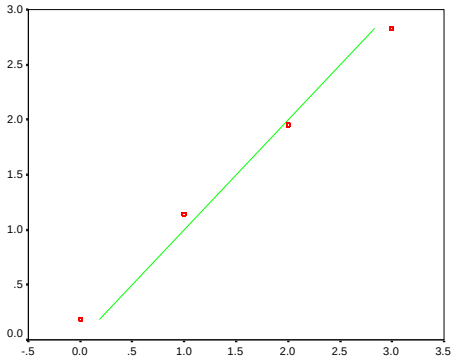

Figure 28: Normal Q-Q Plot of Contracting Self-Efficacy

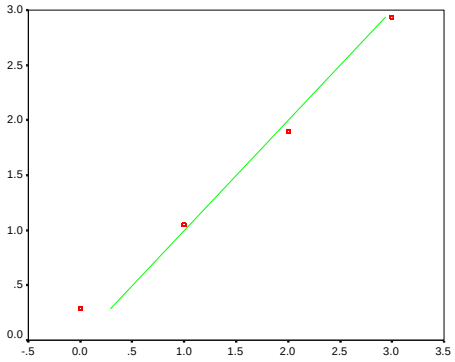

Figure 29: Normal Q-Q Plot of Management Support

For the data to be from a normal distribution, the graph of data points in the Q-Q plots should approximate a straight line, especially near the center. The actual data is represented by the points plotted along the line. The closer the points are to the line, the more normally distributed the data is. Most of the points for the 12 variables fall along the line, indicating that the data is normally distributed. For the tenure variable, the line appears to be curvilinear. The data for tenure was transformed to correct for a moderate positive skew using the square root of the actual number of years an individual has worked for the agency. Even with this transformation, the Q-Q plot indicates tails at the high end of the distribution, possibly due to a high number of GDOT employees who have made their career as a GDOT employee and are skewing the data due to their high numbers of years of service at the agency. Because we are more concerned about points in the center of the line and the tenure points fall near the line at the center, the tenure variable's distribution is acceptable. The normality of the residuals of the 11 other variables are acceptable for the regression analysis.

APPENDIX B: DATA SCATTERPLOTS

To visually inspect the data, each of the independent variables is plotted in a scatterplot against the readiness for contracting variable. Figures 30 through 40 suggest a linear relationship for several of the independent variables and readiness for contracting.

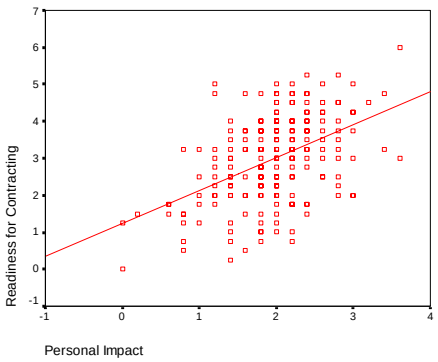

Figure 30: Scatterplot of Personal Impact and Readiness for Contracting

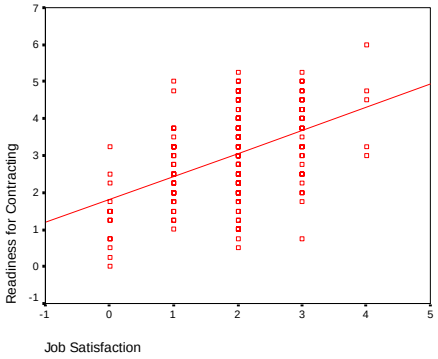

Figure 31: Scatterplot of Job Satisfaction and Readiness for Contracting

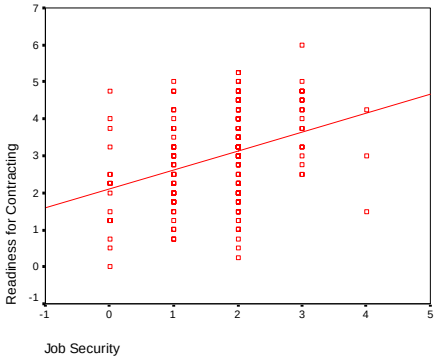

Figure 32: Scatterplot of Job Security and Readiness for Contracting

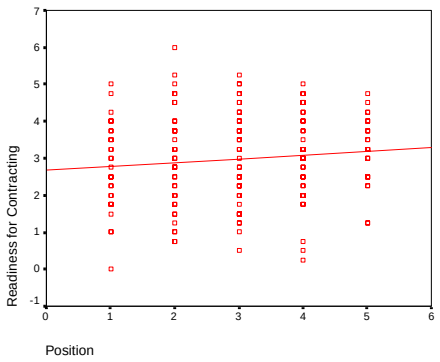

Figure 33: Scatterplot of Position and Readiness for Contracting

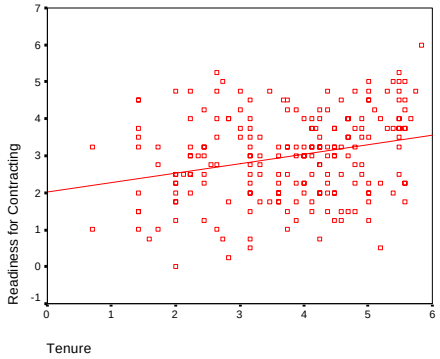

Figure 34: Scatterplot of Tenure and Readiness for Contracting

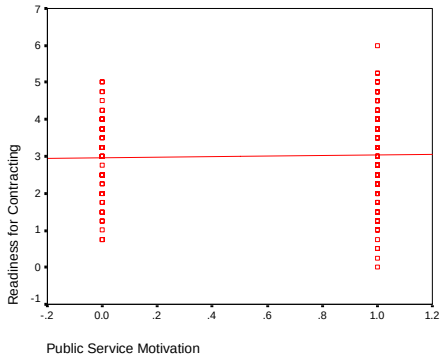

Figure 35: Scatterplot of Public Service Motivation and Readiness for Contracting

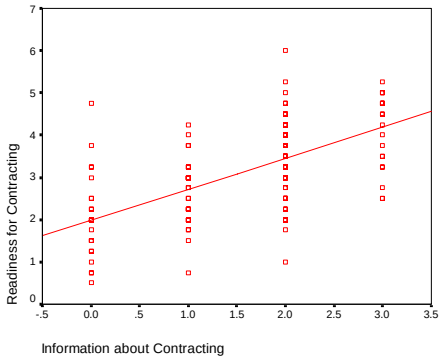

Figure 36: Scatterplot of Information about Contracting Out and Readiness for Contracting

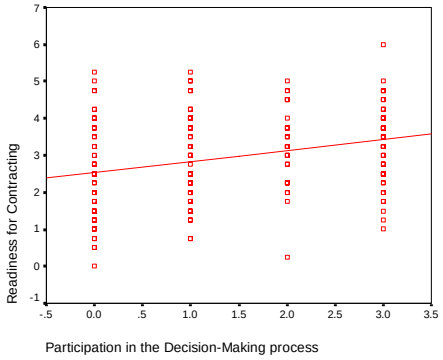

Figure 37: Scatterplot of Participation in the Decision-Making Process and Readiness for Contracting

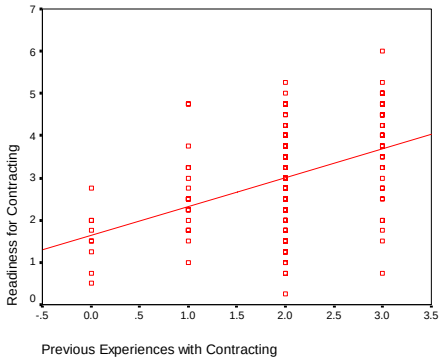

Figure 38: Scatterplot of Previous Experiences with Contracting Out and Readiness for Contracting

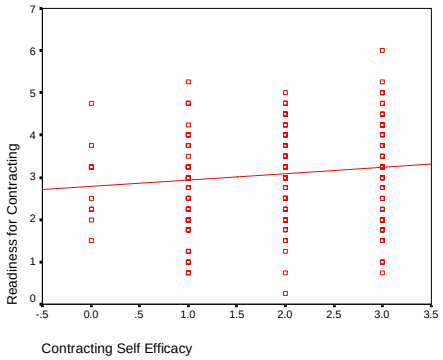

Figure 39: Scatterplot of Contracting Self-Efficacy and Readiness for Contracting

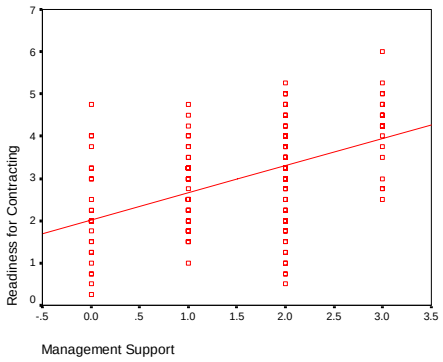

Figure 40: Scatterplot of Management Support and Readiness for Contracting

APPENDIX C: CROSS-TABULATIONS

In order to show the distribution of each of the independent variables in relation to the readiness for contracting dependent variable, I conduct a crosstabulations analysis. This method is used to determine if there is a relationship between two variables. I use Pearson's chi-square statistic to calculate the probability that a relationship found in the sample between the independent variable and dependent variable is due to chance. The chi-square statistic measures this by assessing the difference between the actual frequencies in each cell in the table and the frequencies one would expect to find if there is not a relationship between the variables in the population. The larger the value of the chi-square statistic, the more that the values of the readiness for contracting variable are dependent on the values of each of the independent variables.

In order to simplify the contingency tables, I recoded the variables such that all values are rounded up to the nearest whole number. This results in a range of readiness for contracting between 0 and 6. Each of the independent variables is also rounded up such that the range for the independent variables spans 0 to 6. Tables 20 through 30 present the results of the contingency table analysis, including the Pearson's chi-square statistic for each pair of independent variable with the readiness for contracting variable.

Table 20: Crosstabulations for Personal Impact and Readiness for Contracting

Personal impact	Readiness for contracting							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
0	0.5	0	0.5	0	0	0	0	**0.9%**
1	0	0.9	4.7	0.5	0.9	0	0	**7.0%**
2	0	3.7	9.8	17.7	16.7	5.6	0	**53.5%**
3	0	0.9	5.1	7.0	13.0	9.3	0.9	**36.3%**
4	0	0	0	0.5	0.5	0.9	0.5	**2.3%**
Total	**.5%**	**5.6%**	**20%**	**25.6%**	**31.2%**	**15.8%**	**1.4%**	**100%**

N= 215
Chi-square: **165.66**, df = 24, p= .000

Table 21: Crosstabulations for Job Satisfaction and Readiness for Contracting

Job satisfaction	Readiness for contracting							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
0	0.5	1.9	2.8	0.9	0.5	0	0	**6.5%**
1	0	0.5	6.5	6.0	5.6	0.9	0	**19.5%**
2	0	2.8	9.3	14.9	19.5	8.8	0.5	**55.8%**
3	0	0.5	1.4	3.3	5.1	5.1	0.5	**15.8%**
4	0	0	0	0.5	0.5	0.9	0.5	**2.3%**
Total	**0.5%**	**5.6%**	**20.0%**	**25.6%**	**31.2%**	**15.8%**	**1.4%**	**100%**

N= 215
Chi-square: **72.654**, df = 24, p= .000

Table 22: Crosstabulations for Job Security and Readiness for Contracting

Job security	Readiness for contracting							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
0	0.5	0.9	2.3	2.3	1.4	0.5	0	**7.9%**
1	0	1.9	7.0	7.4	4.2	2.3	0	**22.8%**
2	0	2.8	10.2	13.5	23.3	8.8	0.9	**59.5%**
3	0	0	0	1.9	2.3	3.7	0.5	**8.4%**
4	0	0	0.5	0.5	0	0.5	0	**1.4%**
Total	**0.5%**	**5.6%**	**20.0%**	**25.6%**	**31.2%**	**15.8%**	**1.4%**	**100%**

N= 215
Chi-square: **46.651**, df = 24, p= .004

Table 23: Crosstabulations for Position and Readiness for Contracting

Position	Readiness for contracting							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
0	0	0	0	0	0	0	0	**0%**
1	0.5	0.9	3.2	3.7	5.0	1.4	0	**14.7%**
2	0	2.3	5.5	5.0	6.0	2.8	0.9	**22.5%**
3	0	0.9	6.9	6.0	7.8	5.0	0.5	**27.1%**
4	0	1.4	3.7	6.9	6.0	4.6	0	**22.5%**
5	0	0	0.9	4.1	6.4	1.8	0	**13.3%**
Total	**0.5%**	**5.5%**	**20.2%**	**25.7%**	**31.2%**	**15.6%**	**1.4%**	**100%**

N= 218
Chi-square: 25.471, df = 24, p= .381

Table 24: Crosstabulations for Tenure and Readiness for Contracting

Tenure	Readiness for contracting							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
0	0	0	0	0	0	0	0	**0%**
1	0	0.5	0	0	0.5	0	0	**0.9%**
2	0.5	1.4	3.2	2.3	1.8	1.4	0	**10.6%**
3	0	1.4	1.4	5.5	4.6	2.8	0.5	**16.1%**
4	0	1.4	6.4	8.7	5.0	2.8	0	**24.3%**
5	0	0.5	8.3	7.3	13.3	4.1	0	**33.5%**
6	0	0.5	0.9	1.8	6.0	4.6	0.9	**14.7%**
Total	**0.5%**	**5.5%**	**20.2%**	**25.7%**	**31.2%**	**15.6**	**1.4%**	**100%**

N= 218
Chi-square: **57.312**, df = 30, p= .002

Table 25: Crosstabulations for Public Service Motivation and Readiness for Contracting

Public service motivation	Readiness for contracting							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
0	0	1.4	5.6	7.9	10.3	3.3	0	**28.5%**
1	0.5	3.3	14.0	18.2	21.5	12.6	1.4%	**71.5%**
Total	**0.5%**	**4.7%**	**19.6%**	**26.2%**	**31.8%**	**15.9%**	**1.4%**	**100%**

N=214
Chi-square: 3.240, df = 6, p= .778

Table 26: Crosstabulations for Information about Contracting Out and Readiness for Contracting

Information about contracting	Readiness for contracting							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
0	0	2.2	7.7	3.8	1.6	0.5	0	**15.9%**
1	0	0.5	3.8	9.9	3.8	0.5	0	**18.7%**
2	0	0.5	3.3	11.5	26.9	8.8	1.1	**52.2%**
3	0	0	0	1.6	3.3	7.7	0.5	**13.2%**
Total	**0%**	**3.3%**	**14.8%**	**26.9%**	**35.7%**	**17.6%**	**1.6%**	**100%**

N=182
Chi-square**: 101.170**, df = 15, p= .000

Table 27: Crosstabulations for Participation in the Decision-Making Process and Readiness for Contracting

Participation in the decision-making process	Readiness for contracting							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
0	0.5	3.7	7.3	6.0	4.6	2.3	0.5	**24.8%**
1	0	0.9	8.7	7.8	9.2	3.7	0.5	**30.7%**
2	0	0.5	1.4	5.0	6.4	4.1	0	**17.4%**
3	0	0.5	3.2	6.9	10.6	5.5	0.5	**27.1%**
Total	**0.5%**	**5.5%**	**20.6%**	**25.7%**	**30.7%**	**15.6%**	**1.4%**	**100%**

N=218
Chi-square: **33.371**, df= 18, p= .015

Table 28: Crosstabulations for Previous Experiences with Contracting Out and Readiness for Contracting

Previous experiences with contracting	Readiness for contracting							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
0	0	0.9	3.3	0.5	0	0	0	**4.7%**
1	0	0.5	2.8	4.7	1.9	0.9	0	**10.7%**
2	0	3.3	11.6	18.6	22.8	6.0	0.5	**62.8%**
3	0	0.5	2.3	2.3	7.0	8.8	0.9	**21.9%**
Total	**0%**	**5.1%**	**20.0%**	**26.0%**	**31.6%**	**15.8%**	**1.4%**	**100%**

N=215
Chi-square: **61.718**, df= 15, p= .000

Table 29: Crosstabulations for Contracting Self-Efficacy and Readiness for Contracting

Contracting self-efficacy	Readiness for contracting							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
0	0	0	1.0	1.5	2.5	0.5	0	**5.6%**
1	0	2.0	6.1	9.6	8.6	2.5	0.5	**29.3%**
2	0	1.0	5.1	9.6	14.1	6.6	0	**36.4%**
3	0	1.5	6.6	5.1	8.1	6.6	1.0	**28.8%**
Total	**0%**	**4.5%**	**18.7%**	**25.8%**	**33.3%**	**16.2%**	**1.5%**	**100%**

N=198
Chi-square: 14.688, df= 15, p= .474

Table 30: Crosstabulations for Management Support and Readiness for Contracting

Management support	Readiness for contracting							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
0	0	2.4	5.8	2.4	2.4	0.5	0	**13.6%**
1	0	0.5	6.8	10.2	7.8	1.5	0	**26.7%**
2	0	2.4	6.8	10.2	21.4	6.8	0.5	**48.1%**
3	0	0	0	1.9	1.5	7.3	1.0	**11.7%**
Total	**0%**	**5.3%**	**19.4%**	**24.8%**	**33.0%**	**16.0%**	**1.5%**	**100%**

N=206
Chi-square: **88.951**, df= 15, p= .000

The results of the crosstabulations analysis show that there is a relationship between many of the independent variables and readiness for contracting. The Pearson's chi-square statistic for personal impact, job satisfaction, job security, tenure, information about contracting out, previous experiences with contracting out, and management support are each significant at the .01 level. Additionally, the chi-square statistic for participation in the decision-making process is significant at the .05 level. However, the chi-square statistic in the crosstabulations analysis does not indicate that the probability that a relationship found in the sample between position, public service motivation, and contracting self-efficacy can be ruled out as being due to chance.

APPENDIX D: ASSUMPTIONS OF ORDINARY LEAST SQUARES REGRESSION

In order to use this type of ordinary least squares (OLS) regression, each of the variables was tested for assumptions of the linear regression model. One of the assumptions is that the dependent variable is measured using interval data. However, this study uses a dependent variable from survey data that asked respondents to indicate on a Likert scale their responses to numerous questions. Because Likert data is ordinal, using OLS regression for data analysis violates the assumption of interval data. However, it is common practice among public policy scholars to overlook this assumption and use OLS regression analysis with ordinal data. For example, several recent articles in *Public Administration Review* use ordinary least squares regression with Likert data (e.g., in a study of participative management and job satisfaction (Kim, 2002); in a study of use of university research in government agencies (Landry et al., 2003); and in a study of flextime in the federal government (Ezra and Deckman, 1996)). Articles in the *Journal of Policy Analysis and Management* (e.g., in a study on attracting private investment to contaminated properties (Wernstedt et al., 2006)) and in the *Journal of Public Administration Research and Theory* (e.g., in a study of organizational performance in U.S. Federal agencies (Chun and Rainey, 2005)) also overlook this assumption and make use of ordinal data in OLS regression common practice in public policy research. In a review of literature on the topic of using ordinal data for OLS regression, Jaccard and Wan (1996) summarize, “for many statistical tests, rather severe departures (from intervalness) do not seem to affect Type I and Type II errors dramatically" (Jaccard and Wan, 1996, p. 4). The basic rule-of-thumb by methodologists is that there must be a certain minimum number of classes in a dependent variable measured using ordinal data. Achen (1991) argues for at least five while Berry (1993) argues for seven classes or more (Achen, 1991; Berry, 1993). The dependent variable is this research is measured using eight classes based on the responses to numerous Likert-based questions. Therefore, using this dependent variable is appropriate.

Multicollinearity

OLS regression analysis assumes that multicollinearity between the variables in the model is not a problem. Multicollinearity is a high degree of correlation among several independent variables because some of them may measure the same concepts or phenomena (Stevens, 1996). There are several methods for assessing multicollinearity within a regression model, including correlation coefficients, variance inflation factors, Eigenvalues, and condition indices. Each of these is examined in this section.

First, the commonly accepted maximum bivariate correlation calculation for each set of variables in the model is 0.8 (Kahane, 2001). Using the bivariate correlation calculations presented in Table 12, all calculations for the relationships between variables fall below 0.8. They range from 0.00 which indicates no relationship between the variables to the highest value in the model of 0.78 for the relationship between personal impact and job satisfaction. Because the highest value falls below 0.8, the bivariate correlations do not indicate any problems of multicollinearity in the model.

For each independent variable, I also check the variance inflation factor (VIF) to assess multicollinearity in the model. The VIF for a predictor indicates whether there is a strong linear association between it and all the remaining predictors (Stevens, 1996). A calculation of VIF shows how inflated the variance of the coefficient is, compared to what it would be if the variable were uncorrelated with any other variables in the model (Allison, 1999). Table 31 presents the VIF for each independent variable. When the variance inflation factor (VIF) value is high, the variable is almost a linear combination of the other independent variables. The variance inflation factor should less than 10 or there is a multicollinearity problem with the independent variables (Myers, 1990). The VIF results indicate that the variables are not multicollinear as the values range from 1.36 to 3.71, all falling below the threshold of ten.

Table 31: Multicollinearity Diagnostics

Independent Variable	Variance Inflation Factor	Eigenvalue	Condition Index
Career Path Factors			
Personal impact	3.71	0.35	5.44
Job satisfaction	3.16	0.27	6.19
Job security	1.50	0.21	6.98
Position	1.58	0.19	7.45
Tenure	3.00	0.15	8.49
Public service motivation	1.43	0.11	9.75
Involvement Factors			
Information about contracting out	1.87	0.10	10.01
Participation in the decision-making process	1.45	0.09	10.76
Previous experiences with contracting out	1.64	0.06	12.86
Competence Factors			
Contracting self-efficacy	1.36	0.03	18.30
Management support	1.86	0.02	25.07

Table 31 also presents the eigenvalues and condition indices for each of the independent variables in the model. Eigenvalues close to 0 indicate dimensions which explain little variance. The general rule of thumb is that eigenvalues below 0.1 represent a potential collinearity problem in the model. Because the eigenvalues for information about contracting out, participation in the decision-making process, previous experiences with contracting out, contracting self-efficacy, and management support fall at 0.1 or below, there is a potential multicollinearity problem with these variables. To assess the possible problem further, I check the condition indices for these variables.

If the condition index is above 30, then there is a collinearity problem with the variables in the model. Conversely, a condition index below 30 indicates that the model does not have problems of multicollinearity. For information about contracting out, the condition index value is 10.01; for participation in the decision-making process it is 10.76; for previous experiences with contracting out it is 12.86; for contracting self-efficacy it is 18.30; and for management support it is 25.07. Each of these values falls below the threshold of 30 so we can assume that multicollinearity among the independent variables is not a problem for regression analysis.

Heteroskedasticity

Next, I tested to ensure that there were no problems of heteroskedasticity of the standardized residuals. Heteroskedasticity occurs when there is non-constant variance of the error terms around the regression function. For the dependent variable – readiness for contracting – the normality of the residuals from the regression can be visually inspected from the histogram in Figure 41 with the superimposed normal curve. The residuals for readiness for contracting appear to be approximately normally distributed.

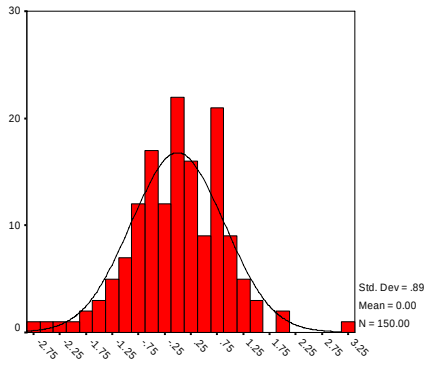

Figure 41: Residuals for Readiness for Contracting

Figures 42 through 52 show scatterplots of each of the partial residuals of the independent variables in a regression with readiness for contracting. The partial residuals investigate the partial relationships between the independent variable residuals and the fitted values for readiness for contracting, controlling statistically for the other independent variables. The plot shows the distribution of partial residuals compared to the expected distribution under the assumption of normality. If there is no pattern in the errors, the errors are said to be homoskedastic and OLS assumptions are not violated (Kahane, 2001; Stevens, 1996). As can be seen from these plots, the residuals cluster around zero, with a few normal strays.

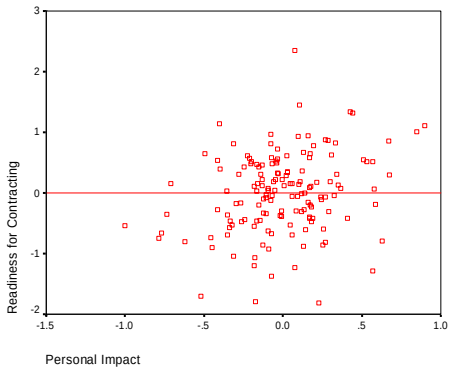

Figure 42: Scatterplot of Partial Residuals for Personal Impact and Readiness for Contracting

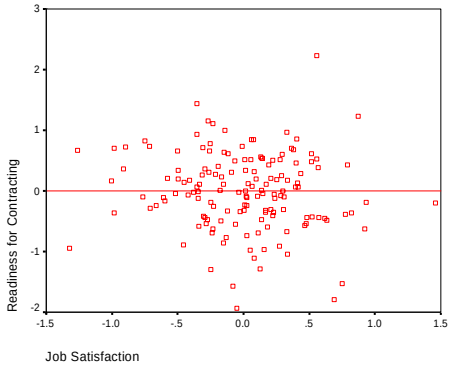

Figure 43: Scatterplot of Partial Residuals for Job Satisfaction and Readiness for Contracting

Figure 44: Scatterplot of Partial Residuals for Job Security and Readiness for Contracting

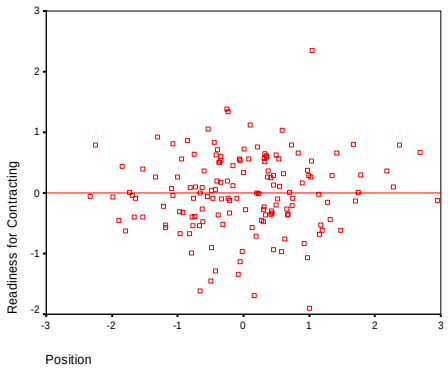

Figure 45: Scatterplot of Partial Residuals for Position and Readiness for Contracting

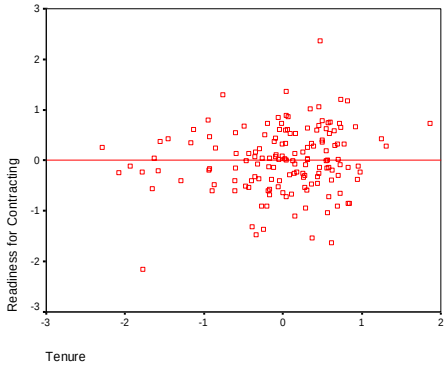

Figure 46: Scatterplot of Partial Residuals for Tenure and Readiness for Contracting

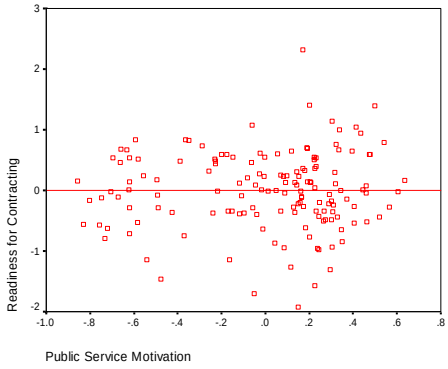

Figure 47: Scatterplot of Partial Residuals for Public Service Motivation and Readiness for Contracting

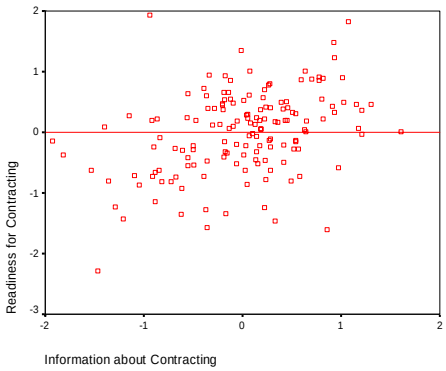

Figure 48: Scatterplot of Partial Residuals for Information about Contracting and Readiness for Contracting

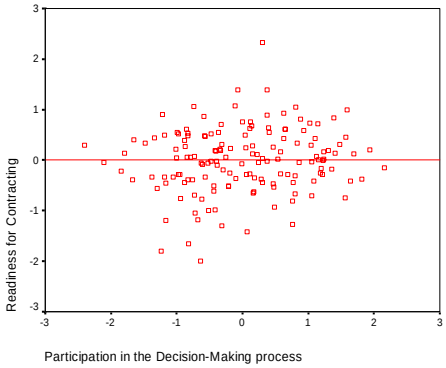

Figure 49: Scatterplot of Partial Residuals for Participation in the Decision-Making Process and Readiness for Contracting

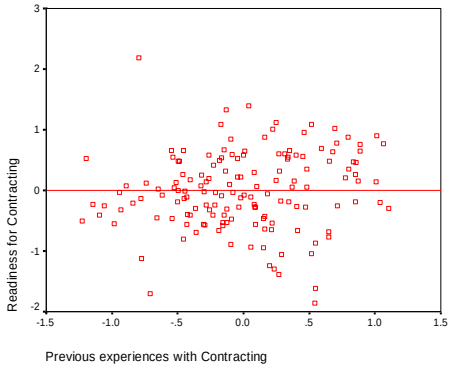

Figure 50: Scatterplot of Partial Residuals for Previous Experiences with Contracting and Readiness for Contracting

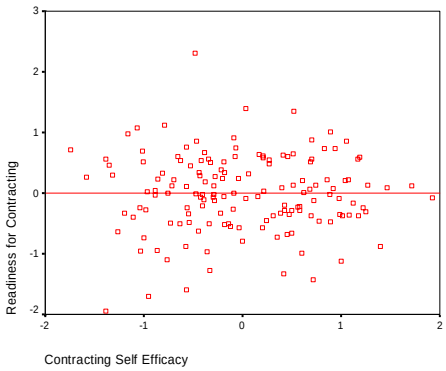

Figure 51: Scatterplot of Partial Residuals for Contracting Self-Efficacy and Readiness for Contracting

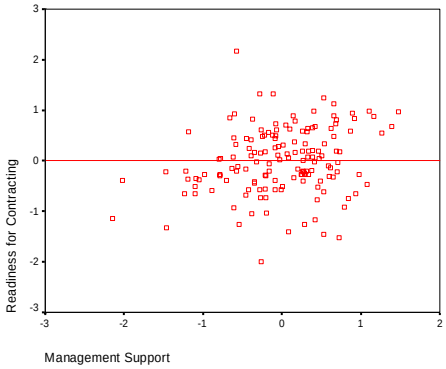

Figure 52: Scatterplot of Partial Residuals for Management Support and Readiness for Contracting

APPENDIX E: SURVEY INTRODUCTION LETTER

Department of Transportation
State of Georgia
Office of Materials and Research
15 Kennedy Drive
Forest Park, Georgia 30297-2599

June 9, 2003

Name
District X
Office
Address
City, GA zip

Dear Name,

Consultants are playing an increasingly important role in the core operations of the Georgia Department of Transportation. Currently we are investigating alternative strategies for strengthening our consultant management practices. I would like your help with this inquiry.

You will be receiving a questionnaire regarding our consultant management practices in a few days. We have asked a research team from Georgia Tech to administer this survey as part of a larger study of our consultant management practices. They will be sending you a survey and analyzing the responses. All information you provide will remain confidential. The research team will process and report the responses of GDOT personnel at an aggregate level.

It is vital that we have your perspectives on managing consultants. The research team is engaging in several inquiries to give us a broad perspective on managing consultants. These include: 1) interviewing managers from the consulting firms, 2) conducting case studies of GDOT projects that employ consultants, 3) reviewing our current strategies and practices, and 4) reviewing consultant management practices in other state DOTs. However, the most important perspectives will come from those of you who work with consultants or consultant related issues on a regular basis.

I greatly appreciate your participation in this study. Effective consultant management has become essential to continue providing a safe and sustainable transportation system.

If you have further questions regarding this study, please contact Dr. Gordon Kingsley of the School of Public Policy at Georgia Tech (his phone number is 404-894-0454 and his email is gordon.kingsley@pubpolicy.gatech.edu) or Rick Deaver in GDOT's Office of Materials and Research (his number is (404) 363-7584 and his email is Rick.Deaver@dot.state.ga.us).

Best regards,

Georgene Geary
State Materials and Research Engineer

APPENDIX F: GEORGIA DEPARTMENT OF TRANSPORTATION SURVEY

GDOT Consultant Management Study
Survey of GDOT Consultant Managers

School of Public Policy
School of Civil & Environmental Engineering
Georgia Institute of Technology

The Georgia Department of Transportation is sponsoring this survey by the Georgia Institute of Technology to identify the issues and challenges related to GDOT's increasing use of consultants. The survey seeks your perspective on how GDOT uses and manages consultants, as well as the implications of increased consultant usage for GDOT's future.

For this survey, a "consultant" is defined as an individual or organization outside of GDOT that performs professional services (such as data collection, design engineering, CEI, information technology design, etc.) for a fee. This does not include low-bid contractors such as those hired for construction.

Questions about the study or the questionnaire should be addressed to:

Dr. Gordon Kingsley
School of Public Policy, Georgia Tech
Atlanta, Georgia 30332-0345
Phone: 404.894.0454; Fax: 404.385.0504
E-Mail: gordon.kingsley@pubpolicy.gatech.edu

Georgia Institute of Technology

GDOT Consultant Management Study
Survey of GDOT Consultant Managers

I. Your Experience With Consultants as a GDOT Employee

This section asks questions about how you are involved with consultants as a GDOT employee.

1. Which of the following activities describe *all* of the various roles you've played at GDOT? (Please check [X] all that apply.)

- ☐ Accountant
- ☐ Administrator
- ☐ Auditor
- ☐ Construction Engineer/Inspector
- ☐ Consultant Liaison
- ☐ Project Manager
- ☐ Design Engineer
- ☐ Legal Advisor
- ☐ Planner
- ☐ Information technology specialist
- ☐ Environmental and Location Specialist
- ☐ Other _____

2. Please indicate whether or not you have been involved with consultants in the past five years in the following roles?

	Yes ▼	No ▼
Interaction with consultants on GDOT projects in a non-supervisory capacity	☐	☐
Direct supervision of consultants working on GDOT projects, but not in a project management capacity	☐	☐
Project management for GDOT projects involving consultants	☐	☐
Oversight of GDOT project managers that supervise consultants	☐	☐
Handling contract development, audits, or billing	☐	☐
Have not worked with consultants in past five years	☐	☐

(please skip to #27)

3. What percentage of your work is associated with managing consultants?

_____ percent of work

4. Please provide your best estimate of numbers of projects in the following questions.

4a. How many projects are you involved in *currently*, whether or not they involve consultants?

_____ Current projects total

4b. Of these projects, how many hire consultants?

_____ Projects involve consultants

4c. Of the consultant projects identified in Question 4a, how many actively involve at least one former GDOT employee in the project?

_____ Consultant projects employing at least one GDOT employee

5. Approximately how many years have you been working with consultants on transportation-related projects?

_____ years working with consultants at GDOT

_____ years working with consultants elsewhere

II. Hiring Consultants at GDOT

This section seeks information on how consultants are hired at GDOT.

6. How important are the following factors in your office's decision to use a consultant for a project, rather than perform the work in-house in GDOT?

	Very Important ▼	Somewhat Important ▼	Somewhat Unimportant ▼	Not at all Important ▼	No Opinion ▼
We lack a specialized skill in-house at GDOT	☐	☐	☐	☐	☐
The absence of a needed technology within GDOT	☐	☐	☐	☐	☐
A shortage of GDOT staff to perform the work	☐	☐	☐	☐	☐

7a. Please indicate the level of your involvement in the following activities when hiring a consultant.

7b. For each of the following steps in hiring consultants, which cause significant administrative delay?

Consultant hiring activity	Highly Involved ▼	Very Involved ▼	Somewhat Involved ▼	No at all Involved ▼	Causes Significant administrative delay ▼	Does not cause significant administrative delay ▼
Identifying which projects will use consultants	☐	☐	☐	☐	☐	☐
Requesting authorization to use consultants on a project	☐	☐	☐	☐	☐	☐
Approving a request by an office to hire a consultant	☐	☐	☐	☐	☐	☐
Preparing an RFQ for consultants	☐	☐	☐	☐	☐	☐
Serving on Selection Committee Reviews of Statements of Qualification	☐	☐	☐	☐	☐	☐
Serving on a Consultant Review Panel	☐	☐	☐	☐	☐	☐
Determining the Scope of Work	☐	☐	☐	☐	☐	☐
Determining Fees	☐	☐	☐	☐	☐	☐
Getting other GDOT offices to review the proposal	☐	☐	☐	☐	☐	☐
Complying with the pre-award audit Writing the final contract	☐	☐	☐	☐	☐	☐
Coordinating a project under a task order with the Office of Consultant Design	☐	☐	☐	☐	☐	☐
Obtaining signatures	☐	☐	☐	☐	☐	☐
Issuing the Notice to Proceed	☐	☐	☐	☐	☐	☐

8. How important are the following factors in your office's decision to hire a particular consultant?

	Very Important ▼	Somewhat Important ▼	Somewhat Unimportant ▼	Not at all Important ▼	No Opinion ▼
A good prior working relationship with the consultant	☐	☐	☐	☐	☐
A consultant's qualifications	☐	☐	☐	☐	☐
A consultant with a good reputation	☐	☐	☐	☐	☐
Presence of former GDOT staff on consultant's team	☐	☐	☐	☐	☐
Spreading dollars around the consultant community	☐	☐	☐	☐	☐

9. When hiring, what sources of information are important to you in assessing a consultant's capabilities and qualifications? (Please check ☒ all that apply.)

- ☐ Word-of-mouth from GDOT employees in my office
- ☐ Word-of-mouth from GDOT employees in other offices
- ☐ Previous experiences with a particular consultant
- ☐ OCD's Consultant Performance Evaluation forms
- ☐ Construction's Consultant and/or Inspector Quarterly Evaluation forms
- ☐ GDOT project records
- ☐ GDOT information systems (e.g., TPro)
- ☐ Self-reports from the consultants
- ☐ References
- ☐ Other; please list _____

10. Please rate your level of agreement or disagreement with the following statements about using consultants that hire former GDOT employees to work on GDOT projects.

	Very Important ▼	Somewhat Important ▼	Somewhat Unimportant ▼	Not at all Important ▼	No Opinion ▼
Hiring consultants that employ former GDOT staff is good for GDOT.	☐	☐	☐	☐	☐
Hiring consultants that employ former GDOT staff helps maintain GDOT's way of doing things.	☐	☐	☐	☐	☐
I have friendlier relationships with consultants that employ former GDOT staff than those that do not employ former GDOT staff.	☐	☐	☐	☐	☐
Consultants that employ former GDOT staff have less to learn about GDOT practices and procedures than those that do not employ former GDOT staff.	☐	☐	☐	☐	☐
I know the capabilities of consultants that are former GDOT employees better than consultants who are non-GDOT employees.	☐	☐	☐	☐	☐
GDOT management encourages me to employ firms with former GDOT employees.	☐	☐	☐	☐	☐

III. Managing Consultants at GDOT

This section seeks information on how GDOT manages consultants.

11. How often do you use the following channels to communicate with consultants?

	Daily	Weekly	Monthly	Quarterly	Yearly	Rarely
Telephone calls	☐	☐	☐	☐	☐	☐
Conference calls	☐	☐	☐	☐	☐	☐
Face-to-face meetings	☐	☐	☐	☐	☐	☐
E-mail	☐	☐	☐	☐	☐	☐
Fax	☐	☐	☐	☐	☐	☐
U.S. Postal Service mail	☐	☐	☐	☐	☐	☐
Firm's OCD mailbox	☐	☐	☐	☐	☐	☐

12. Over the course of a project, how important are the following procedures in your efforts to manage consultants?

	Highly Important	Important	Somewhat Important	Not Very Important	Not Important At All	Not Applicable
Ensuring compliance with the Project Development Plan (PDP)	☐	☐	☐	☐	☐	☐
Ensuring that the Plan Presentation Guide is followed (PPG)	☐	☐	☐	☐	☐	☐
Reviewing budget expenditures	☐	☐	☐	☐	☐	☐
Reviewing consultant invoices	☐	☐	☐	☐	☐	☐
Reviewing periodic written progress reports from consultant	☐	☐	☐	☐	☐	☐
Reviewing contract terms	☐	☐	☐	☐	☐	☐
Monitoring the project schedule	☐	☐	☐	☐	☐	☐
Reviewing checklists of deliverables	☐	☐	☐	☐	☐	☐
Monitoring the Quality Control Plan	☐	☐	☐	☐	☐	☐
Reviewing the Project Management Plan	☐	☐	☐	☐	☐	☐
Reviewing the Correspondence Log	☐	☐	☐	☐	☐	☐
Reviewing Quarterly DBE reports	☐	☐	☐	☐	☐	☐
Ensuring compliance with GDOT Electronic Data Guidelines	☐	☐	☐	☐	☐	☐
Ensuring conformity to GDOT design criteria, rules, regulations, and policies	☐	☐	☐	☐	☐	☐
Reviewing status of task completion in TPro	☐	☐	☐	☐	☐	☐
Reviewing the Concept Report	☐	☐	☐	☐	☐	☐
Preliminary Field Plan Review	☐	☐	☐	☐	☐	☐
Final Field Plan Review	☐	☐	☐	☐	☐	☐
Completing Consultant Performance Evaluation forms	☐	☐	☐	☐	☐	☐
Site Visits	☐	☐	☐	☐	☐	☐

13. What percentage of your time is spent in direct communications (e.g., phone calls, e-mails, voicemails, and meetings) with consultants?

☐ percent of time

14. Please indicate how important the following attributes are for an effective relationship with a consultant. *"A consultant should . . ."*

"A consultant should . . ."	Very Important ▼	Somewhat Important ▼	Somewhat Unimportant ▼	Not at all Important ▼	No Opinion ▼
Be an expert in a technical or specialized area.	☐	☐	☐	☐	☐
Cost less to perform work than GDOT	☐	☐	☐	☐	☐
Have sufficient staff to be able to handle unanticipated work changes.	☐	☐	☐	☐	☐
Charge a fair price	☐	☐	☐	☐	☐
Be a flexible organization in adapting to work changes	☐	☐	☐	☐	☐
Know GDOT rules and procedures	☐	☐	☐	☐	☐
Follow GDOT rules and procedures	☐	☐	☐	☐	☐
Have good professional ties to the consulting community	☐	☐	☐	☐	☐
Contact me only for real problems	☐	☐	☐	☐	☐
Be resourceful	☐	☐	☐	☐	☐
Know my working style well	☐	☐	☐	☐	☐
Do what I say	☐	☐	☐	☐	☐
Know how my office's requirements differ from other offices in GDOT	☐	☐	☐	☐	☐
Understand that he/she is working for me	☐	☐	☐	☐	☐
Give me better ideas on how things could be done	☐	☐	☐	☐	☐
Form a close working relationship with me	☐	☐	☐	☐	☐
Channel all communication to me through one person at the consultant's firm	☐	☐	☐	☐	☐
Manage all the communication with sub-consultants for a project	☐	☐	☐	☐	☐
Should handle internal GDOT management and political issues	☐	☐	☐	☐	☐
Should do what they say they will do	☐	☐	☐	☐	☐
Understand GDOT's mission and goals	☐	☐	☐	☐	☐
Be loyal to GDOT and me	☐	☐	☐	☐	☐
Be a good sounding board	☐	☐	☐	☐	☐

15. How accurately do the following phrases describe your experiences with consultants?

	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
There are clear communications between the consultant and my office	☐	☐	☐	☐	☐
There is a team atmosphere between GDOT staff and consultants	☐	☐	☐	☐	☐
Goals and expectations of the consultant are clearly defined by GDOT	☐	☐	☐	☐	☐
I trust consultants	☐	☐	☐	☐	☐
My office is more lenient with consultants with whom it has prior working relationships and trust	☐	☐	☐	☐	☐

	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
Upper management has a vision for how consultants fit into the GDOT mission.	☐	☐	☐	☐	☐
GDOT has an appropriate level of rules and procedures for consultants to follow.	☐	☐	☐	☐	☐
My experience with consultants has generally been positive.	☐	☐	☐	☐	☐
Sometimes I don't feel I have the necessary training to best manage consultants.	☐	☐	☐	☐	☐
I am responsible for the quality of the consultant's work.	☐	☐	☐	☐	☐
I am responsible for ensuring that consultants are fully compliant with GDOT rules and procedures.	☐	☐	☐	☐	☐
GDOT has clear policies on the types of projects that should use consultants.	☐	☐	☐	☐	☐
GDOT likes to distribute work evenly throughout the qualified consultant community.	☐	☐	☐	☐	☐
I understand how the use of consultants fits within GDOT's strategic plan.	☐	☐	☐	☐	☐
GDOT has the internal administrative capabilities to manage consultants.	☐	☐	☐	☐	☐
I get clear guidance and direction on how I should manage consultants.	☐	☐	☐	☐	☐

16. This question presents opposite characteristics of GDOT-consultant relationships. Please circle the number between the opposites that reflects <u>your</u> relationship with consultants with whom you work.

	1	2	3	4	5	
Partner						Outsider
Open and Transparent						Closed and on a need-to-know basis
Cooperative						Adversarial
Flexible						Inflexible
Improving						Declining
Involved						Distant
Respectful						Disrespectful
Social						All Business
Friend						Enemy
Informal						Formal

17. In your experience in working with GDOT consultants, please indicate the frequency in which you personally are also likely to interact with these consultants in the following environments:

	Frequently ▼	Somewhat Frequently ▼	Somewhat Infrequently ▼	Infrequently ▼	Never ▼
Professional organization meetings	☐	☐	☐	☐	☐
GDOT consultant relations groups (GQI, etc.)	☐	☐	☐	☐	☐
Training sessions	☐	☐	☐	☐	☐
Alumnae groups	☐	☐	☐	☐	☐
Service organization	☐	☐	☐	☐	☐
Civic groups	☐	☐	☐	☐	☐
Sports clubs	☐	☐	☐	☐	☐
Youth groups	☐	☐	☐	☐	☐
Religious organizations	☐	☐	☐	☐	☐
Social events	☐	☐	☐	☐	☐

IV. Human Resources and Consultant Management at GDOT

18a. Please indicate your level of agreement or disagreement with the statement, *"GDOT employees who manage consultants are well trained in . . ."*

"GDOT employees who manage consultants are well trained in . . ."	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
Understanding how consultants do business	☐	☐	☐	☐	☐
Administrative procedures for consultant procurement	☐	☐	☐	☐	☐
Funding and budgetary requirements	☐	☐	☐	☐	☐
Types of contracts and task orders	☐	☐	☐	☐	☐
Project management	☐	☐	☐	☐	☐
Negotiation	☐	☐	☐	☐	☐
Leadership	☐	☐	☐	☐	☐
Verbal skills	☐	☐	☐	☐	☐
Writing skills	☐	☐	☐	☐	☐
Interpersonal skills	☐	☐	☐	☐	☐
Regulatory compliance	☐	☐	☐	☐	☐
Auditing	☐	☐	☐	☐	☐
Contract management	☐	☐	☐	☐	☐
Quality assurance/ quality control	☐	☐	☐	☐	☐

"GDOT employees who manage consultants are well trained in . . ."	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
Invoices/Accounting	☐	☐	☐	☐	☐
GDOT information systems for managing consultants (e.g., TPro)	☐	☐	☐	☐	☐
Troubleshooting common issues	☐	☐	☐	☐	☐
Issuance of supplemental agreements	☐	☐	☐	☐	☐
Knowledge of technical skill being provided by consultant	☐	☐	☐	☐	☐

	18b. In which of the following areas has GDOT provided you training or sponsored you to receive training from an outside source?		**18c. In which of the following areas would you like to receive training?**	
	Have received training ▼	Have not received training ▼	Would like to receive training ▼	Would not like to receive training ▼
Understanding how consultants do business	☐	☐	☐	☐
Administrative procedures for consultant procurement	☐	☐	☐	☐
Funding and budgetary requirements	☐	☐	☐	☐
Types of contracts and task orders	☐	☐	☐	☐
Project management	☐	☐	☐	☐
Negotiation	☐	☐	☐	☐
Leadership	☐	☐	☐	☐
Verbal skills	☐	☐	☐	☐
Writing skills	☐	☐	☐	☐
Interpersonal skills	☐	☐	☐	☐
Regulatory compliance	☐	☐	☐	☐
Auditing	☐	☐	☐	☐
Contract management	☐	☐	☐	☐
Quality assurance/quality control	☐	☐	☐	☐
Invoices/Accounting	☐	☐	☐	☐
GDOT information systems for managing consultants (e.g., TPro)	☐	☐	☐	☐
Troubleshooting common issues	☐	☐	☐	☐
Issuance of supplemental agreements	☐	☐	☐	☐
Knowledge of technical skill being provided by consultant	☐	☐	☐	☐

19. To what extent do you agree or disagree with the following statements about consultant management?

	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
GDOT consultant management training is effective	☐	☐	☐	☐	☐
Firms that provide consultant services receive sufficient training in GDOT processes and procedures	☐	☐	☐	☐	☐
I prefer to learn consultant management issues while on the job, rather than in training	☐	☐	☐	☐	☐
Available GDOT staff time for completing training is sufficient	☐	☐	☐	☐	☐

V. Consultant Performance and Evaluation at GDOT

This section seeks your input on how consultants perform at GDOT.

20. To what extent do you agree or disagree with the following statements about consultant usage at GDOT?

	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
For the most part, consultant fees are accurate reflections of work performed.	☐	☐	☐	☐	☐
Supplemental agreements are caused by GDOT more so than by consultant requests.	☐	☐	☐	☐	☐
Supplemental agreements are a common occurrence in contracts with consultants.	☐	☐	☐	☐	☐
My office adheres strictly to project deadlines.	☐	☐	☐	☐	☐
My office cares more about completing a project on time than adhering to budgetary constraints.	☐	☐	☐	☐	☐
My office cares more about maintaining positive relationships with consultants than adhering to contract terms.	☐	☐	☐	☐	☐
My office should monitor GDOT consultants more closely	☐	☐	☐	☐	☐
When a consultant performs poorly for"my office, other"GDOT offices hear about it.	☐	☐	☐	☐	☐
If a consultant performs poorly for my office, chances are they won't be hired again by my office.	☐	☐	☐	☐	☐
If a consultant performs poorly for my office, chances are they won't be hired again by any GDOT office.	☐	☐	☐	☐	☐
Projects suffer from scope creep.	☐	☐	☐	☐	☐

21. In your experience, how qualified are GDOT prime consultants that you are working with in the following areas?

	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
Technical expertise	☐	☐	☐	☐	☐
Project management	☐	☐	☐	☐	☐
Professionalism	☐	☐	☐	☐	☐
Interpersonal skills	☐	☐	☐	☐	☐
Knowledge of GDOT procedures	☐	☐	☐	☐	☐
Presentation skills	☐	☐	☐	☐	☐
Problem-solving skills	☐	☐	☐	☐	☐
Communication skills	☐	☐	☐	☐	☐

VI. How Consultants Affect GDOT Employees

22. This question presents opposite impacts that consultants may have on GDOT employees. Please circle the number between the opposites that reflects the impact that consultants have had on <u>you</u> as a GDOT employee.

Lighter workload	1 2 3 4 5	Heavier workload
Higher morale	1 2 3 4 5	Lower morale
Higher motivation	1 2 3 4 5	Lower motivation
Higher productivity	1 2 3 4 5	Lower productivity
Higher job satisfaction	1 2 3 4 5	Lower job satisfaction
Higher job security	1 2 3 4 5	Lower job security
Higher job success	1 2 3 4 5	Lower job success

23. To what extent do you agree or disagree with the following statements about the impact of consultant management on GDOT employee career paths?

	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
GDOT employees who manage consultants are promoted more quickly than GDOT employees who do not manage consultants.	☐	☐	☐	☐	☐
Having experience in managing consultants is necessary for career advancement at GDOT.	☐	☐	☐	☐	☐
Consultant management experience is a good skill to have.	☐	☐	☐	☐	☐
Consultant management experience enhances my attractiveness to other employers.	☐	☐	☐	☐	☐

VII. How Consultants Affect GDOT as a State Agency

24. How much do you agree or disagree with the following statements about consultant usage at GDOT?

	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
Consultants are necessary to accomplish GDOT's mission.	☐	☐	☐	☐	☐
Using consultants is good for GDOT.	☐	☐	☐	☐	☐
In the next ten years, the need for consultants within GDOT will decline over time.	☐	☐	☐	☐	☐
GDOT should develop greater expertise in managing consultants.	☐	☐	☐	☐	☐

	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
GDOT should become an agency primarily responsible for managing consultants and contractors.	☐	☐	☐	☐	☐

25. This question presents opposite versions of impacts that consultants may have on GDOT *as a state agency*. Please circle a number between the opposites that reflects the nature of the impact that consultants has had on GDOT *as a state agency*.

Lower Costs	1 2 3 4 5	Higher Costs
Enhanced Service	1 2 3 4 5	Reduced Service
Added skills	1 2 3 4 5	Lost skills
Administrative Flexibility	1 2 3 4 5	Administrative Inflexibility
Agency Effectiveness	1 2 3 4 5	Agency Ineffectiveness
Improved Agency Reputation	1 2 3 4 5	Damaged Agency Reputation
Effective use of in-house staff	1 2 3 4 5	Ineffective use of in-house staff
Stronger in-house core competencies	1 2 3 4 5	Weaker in-house core competencies
Motivated Staff	1 2 3 4 5	Unmotivated Staff
Increased Employee Performance	1 2 3 4 5	Decreased Employee Performance
More Staff	1 2 3 4 5	Less Staff
Motivated management	1 2 3 4 5	Unmotivated management
Accountability Gained	1 2 3 4 5	Accountability Lost
Higher quality work	1 2 3 4 5	Lower quality work

26. To what extent do you agree or disagree with the following endings to the statement "GDOT would be better off if . . . "

GDOT would be better off if . . .	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
All the work was performed in-house without hiring any consultants.	☐	☐	☐	☐	☐
More consultants were hired to assist GDOT.	☐	☐	☐	☐	☐
The pool of available consultants were more competent to do GDOT work.	☐	☐	☐	☐	☐
GDOT staff were more skillful in utilizing consultants.	☐	☐	☐	☐	☐
GDOT staff and consultants work more as partners to achieve GDOT goals.	☐	☐	☐	☐	☐

VIII. General Information

This section seeks general information on you as a GDOT employee.

27. Please rate your level of agreement with the following statements:

	Strongly Agree ▼	Somewhat Agree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	No Opinion ▼
I consider public interest my civic duty.	☐	☐	☐	☐	☐
Meaningful public service is very important to me.	☐	☐	☐	☐	☐
I would prefer seeing public officials do what is best for the whole community even if it harmed my interests.	☐	☐	☐	☐	☐

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	No Opinion
I identify myself as a professional more so than a public servant.	☐	☐	☐	☐	☐
Professional reputation is more important to me than rank.	☐	☐	☐	☐	☐
My work should be primarily technical rather than managing consultants.	☐	☐	☐	☐	☐

28. Approximately how long have you worked for GDOT?

_____ years

29. Have you ever worked in the private sector on transportation-related issues?

☐ Yes ☐ No

29a. If yes, for how many years did you work in the private sector?

_____ years in the private sector.

30. Please indicate your highest level of education:

- ☐ GED
- ☐ High School Diploma
- ☐ Some college education
- ☐ Associates degree
- ☐ Undergraduate degree
- ☐ Graduate degree

31. Which of the following categories best describes your age:

- ☐ Under 30
- ☐ 30-35
- ☐ 36-45
- ☐ 46-55
- ☐ Over 55

32. What is your gender?

☐ Female ☐ Male

33. For which GDOT Division or Office do you currently work? Are these all mutually exclusive?

- ☐ Division of Construction
- ☐ Division of Legal Services
- ☐ Division of EEO
- ☐ Division of Field Districts
- ☐ Division of Preconstruction
- ☐ Division of Operations
- ☐ Division of Transportation Planning, Data, & Intermodal Development
- ☐ Division of Information Technology
- ☐ Division of Administration
- ☐ Office of Communications
- ☐ Office of State Aid
- ☐ Office of Engineering Services
- ☐ Office of Audits
- ☐ Office of Budget Services
- ☐ Office of Personnel
- ☐ Other _____

Thank you for taking time to complete this questionnaire.

Your assistance in providing the information is very much appreciated.
If there is anything else you would like to tell us about this survey,
or about the opportunities and challenges of managing consultants at GDOT,
please do so in the space provided below.

Please return your completed questionnaire in the self-addressed envelope provided to:
Dr. Gordon Kingsley
School of Public Policy, Georgia Tech
Atlanta, Georgia 30332-0345
Phone: 404.894.0454; Fax: 404.385.0504
E-Mail: gordon.kingsley@pubpolicy.gatech.edu

School of Public Policy
School of Civil & Environmental Engineering
Georgia Institute of Technology

Georgia Institute of Technology

APPENDIX G: SURVEY REMINDER POST CARD

June 13, 2003

Last week we mailed you a questionnaire on how consultants are used and managed by GDOT.

If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. Your input will help GDOT strengthen its consultant management practices.

If you did not receive a questionnaire, or if it was misplaced, please call us at 404-894-0454 or email gordon.kingsley@pubpolicy.gatech.edu and we will get another one in the mail to you today.

Dr. Gordon Kingsley
Georgia Institute of Technology
School of Public Policy
Atlanta, GA 30332-0345


Georgia Tech
Ivan Allen College
School of Public Policy
Atlanta, Georgia 30332-0345 U.S.A.

APPENDIX H: SURVEY CODEBOOK

Georgia Department of Transportation Consultant Management Study

Codebook

General Guidelines

Background

The survey is part of the GDOT Research Project #2020 "Strategies to Strengthen Consultant Management in the Georgia Department of Transportation." The survey content was developed building on the findings from the Systems Review, GDOT Project Management Case Studies, and the Consultant Interviews.

Objective

The objective of this survey is to identify the issues and challenges related to GDOT's increasing use of consultants and assess the consultant management from the perspective of a broad cross-section of GDOT personnel.

Implementation

The Georgia Tech (GT) project team designed and implemented the GDOT survey in accordance with the best practices outlined in Dillman's Tailored Design Method (1999)[1]. These practices include: (1) a questionnaire with reader-friendly content; (2) five personalized contacts that vary slightly in format, but retain a consistent "look"; (3) carefully crafted messages regarding the importance of the survey content; and (4) the provision of self-addressed envelopes affixed with postage stamps.

The survey content was based on input collected through 17 semi-structured interviews with mid-level and senior GDOT managers between April 2002 and July 2003. Data from twelve case studies of GDOT consultant projects gathered between October 2002 and March 2003 also informed survey development.

A draft survey was pre-tested using an interview process. This resulted in improvements to question design and survey format, including additional questions, conceptual clarifications and improved language consistency. The survey was professionally designed to be reader-friendly and convey high quality. The final survey design encompassed 16 pages, 33 questions, and nearly 300 individual survey items.

The "sampling frame" of names was developed by telephoning, e-mailing and faxing all office heads to request contact information (including telephone numbers and mailing addresses) for GDOT employees working with consultants. Some offices reported no employees working with consultants, while one office provided contact information for 25 employees interacting with consultants. This effort yielded 286 GDOT employees from eight divisions, 41 offices, and seven districts. The composition of employees represented on the list ranged from project managers to administrative personnel to division heads. After this initial list was compiled, the research team telephoned the individuals on the list to verify their contact information. These phone calls yielded minor contact information changes, allowing the project team to finalize the list and proceed with survey implementation.

The survey implementation process proceeded in five stages. First, GDOT managers received a letter alerting them that the survey would be forthcoming. The first survey package followed the alert letter,

[1] Dillman, Don A. Mail and Electronic Surveys: The Tailored Design Method. New York: J. Wiley, 1999.

which included a cover letter from Georgia Tech explaining the survey's purpose and importance, a copy of the survey, and a stamped self-addressed envelope. This survey package was sent through GDOT's interdepartmental mail. Three days later, postcards were mailed out to each employee advising them that the survey had been mailed, and requesting that they contact Georgia Tech if they had not received it or had any questions. Non-respondents were sent another survey package on the third week of the process, followed by a reminder follow-up call one week later.

GDOT Survey Timeline

Date	Task
June 9	Alert Letters Distributed
June 13	First Survey Package Mailed
June 19	Reminder Postcard Mailed
June 23	Second Survey Package Mailed
July 7-14	Telephone calls to non-respondents

Calendar Year

All information furnished in this questionnaire should be for calendar year 2003.

Consultants

A consultant is defined as an individual or organization outside of GDOT that performs professional services (such as data collection, design engineering, CEI, information technology design, etc.) for a fee. This definition does not include low-bid contractors, such as those hired for construction.

Confidentiality

Individual responses will be kept confidential. All information is processed and reported at an aggregate level.

Research Team

This research was prepared under the direction of Dr. Gordon Kingsley, School of Public Policy, Georgia Institute of Technology. Dara O'Neil, Leisha DeHart-Davis, Sheldon Gen, Jessica Palmiotti, Jue Wang, Patrick Wolfe, and Mary Alexander contributed.

	Code	Mean	Std. Dev.	Value	Freq	Description
I. Your Experience with Consultants as a GDOT Employee *This section asks questions about how GDOT employees are involved with consultants.*						
Q1	**Which of the following activities describe all of the various roles you have played at GDOT?**					
	ROLACONT	.04	.198	Accountant		
				1	9	Yes
				0	212	No
	ROLADMIN	.17	.374	Administrator		
				1	37	Yes
				0	184	No
	ROLAUDIT	.03	.163	Auditor		
				1	6	Yes
				0	215	No
	ROLSUPER	.31	.463	Supervise construction engineer/inspector (ceis).		
				1	68	Yes
				0	153	No
	ROLCONMN	.24	.425	Project manager (construction)		
				1	69	Yes
				0	152	No
	ROLPREMN	.39	.490	Project manager (preconstruction)		
				1	87	Yes
				0	134	No
	ROLOTHMN	.18	.382	Project manager (other)		
				1	69	Yes
				0	152	No
	ROLCONST	.31	.464	Consultant liaison		
				1	69	Yes
				0	152	No
	ROLDESGN	.41	.493	Design engineer		
				1	91	Yes
				0	130	No
	ROLLEGAL	.02	.134	Legal advisor		
				1	4	Yes
				0	217	No
	ROLPLANR	.07	.260	Planner		
				1	16	Yes
				0	205	No

	ROLITSPC	.05	.227	Information technology specialist		
				1	12	Yes
				0	209	No
	ROLENVSP	.04	.187	Environmental and location specialist		
				1	8	Yes
				0	213	No
	ROLWSPC	.06	.244	Right of way specialist		
				1	14	Yes
				0	207	No
	ROLOTH1	.13	.333	Other		
				1	28	Yes
				0	193	No
	ROLOTH2			text		The role that the respondent has played at GDOT, excluding those above.
Q2	**Please indicate whether or not you have been involved with consultants in the past five years in the following roles.**					
	INVINTER	.75	.433	Interaction with consultants on GDOT projects in a non-supervisory capacity		
				1	149	Yes
				0	47	No
					35	Missing
	INVSUPER	.62	.487	Direct supervision of consultants working on GDOT projects, but not in a project management capacity		
				1	122	Yes
				0	73	No
					36	Missing
	INVPMGMT	.77	.420	Project management for GDOT projects involving consultants		
				1	161	Yes
				0	45	No
					25	Missing
	INVOVER	.58	.495	Oversight of GDOT project managers that supervise consultants		
				1	109	Yes
				0	78	No
					44	Missing
	INVADMIN	.60	.491	Handling contract development, audits, or billing		
				1	114	Yes
				0	77	No
					40	Missing

	INVNOT	.06	.244	Have not worked with consultants in past five years		
				1	8	Yes
				0	122	No
					101	Missing
Q3	**What percentage of your work time is associated with managing consultants?**					
	CONTIME	29.72	25.82	num	27	Missing
Q4a	**How many projects are you involved in currently, whether or not they involve consultants? The word project**					
	PROJNUM	76.00	234.6	num	15	Missing
Q4b	**Of these projects, how many hire consultants?**					
	PROJCONS	33.11	67.39	num	21	Missing
Q4c	**Of the consultant projects identified in Question 4b, how many actively involve at least one former GDOT employee?**					
	PROJFORM	14.73	35.37	num	30	Missing
Q5	**Approximately how many years have you been working with consultants on transportation-related projects?**					
	EXPCON1	6.839	5.544	num	Years working with consultants at GDOT.	
					13	Missing
	EXPCON2	1.25	3.965	num	Years working with consultants elsewhere.	
					61	Missing
II. Hiring Consultants at GDOT *This section seeks information on how consultants are hired at GDOT.*						
Q6	**How important are the following factors in your office's decision to use a consultant for a project, rather than perform the work in-house in GDOT?**					
	LAKSKILL	1.98	1.095	We lack a specialized skill in-house at GDOT		
				3	82	Very Important
				2	62	Somewhat Important
				1	17	Somewhat Unimportant
				0	34	Not at all Important
				9	25	No Opinion
					18	Missing
	LAKTECH	1.42	1.083	The absence of a needed technology within GDOT		
				3	37	Very Important
				2	58	Somewhat Important
				1	41	Somewhat Unimportant
				0	52	Not at all Important
				9	25	No Opinion
					18	Missing

	LAKSTAFF	2.61	.701	A shortage of GDOT staff to perform the work		
				3	146	Very Important
				2	51	Somewhat Important
				1	4	Somewhat Unimportant
				0	7	Not at all Important
				9	8	No Opinion
					15	Missing
Q7a	**Please indicate the level of your involvement in the following activities when hiring a consultant.**					
	HIRID	1.47	1.129	Identifying which projects will use consultants		
				3	59	Highly Involved
				2	38	Very Involved
				1	68	Somewhat Involved
				0	54	Not at all Involved
					12	Missing
	HIRAUTH	1.54	1.133	Requesting authorization to use consultants on a project		
				3	63	Highly Involved
				2	41	Very Involved
				1	63	Somewhat Involved
				0	52	Not at all Involved
					12	Missing
	HIRAPPRO	.53	.903	Approving a request by an office to hire a consultant		
				3	15	Highly Involved
				2	14	Very Involved
				1	40	Somewhat Involved
				0	150	Not at all Involved
					12	Missing
	HIRRFQ	.89	1.096	Preparing an RFQ for consultants		
				3	31	Highly Involved
				2	26	Very Involved
				1	47	Somewhat Involved
				0	114	Not at all Involved
					13	Missing
	HIRCOM	.99	1.164	Serving on Selection Committee Reviews of Statements of Qualification		
				3	36	Highly Involved
				2	35	Very Involved
				1	34	Somewhat Involved
				0	114	Not at all Involved
					12	Missing

	HIRPAN	.73	1.061	Serving on a consultant review panel		
				3	27	Highly Involved
				2	20	Very Involved
				1	38	Somewhat Involved
				0	134	Not at all Involved
					12	Missing
	HIRSCOPE	1.43	1.138	Determining the Scope of Work		
				3	50	Highly Involved
				2	57	Very Involved
				1	46	Somewhat Involved
				0	65	Not at all Involved
					13	Missing
	HIRFEE	.87	1.089	Determining fees		
				3	28	Highly Involved
				2	31	Very Involved
				1	42	Somewhat Involved
				0	115	Not at all Involved
					15	Missing
	HIROTHOF	.93	1.122	Getting other GDOT offices to review the proposal		
				3	32	Highly Involved
				2	34	Very Involved
				1	39	Somewhat Involved
				0	114	Not at all Involved
					12	Missing
	HIRAUDIT	.74	1.081	Complying with the pre-award audit		
				3	26	Highly Involved
				2	25	Very Involved
				1	31	Somewhat Involved
				0	137	Not at all Involved
					12	Missing
	HIRWRITE	.85	1.114	Writing the final contract		
				3	30	Highly Involved
				2	28	Very Involved
				1	35	Somewhat Involved
				0	124	Not at all Involved
					14	Missing

	HIROCD	.80	1.069	Coordinating a project under a task order with the Office of Consultant Design		
				3	25	Highly Involved
				2	29	Very Involved
				1	38	Somewhat Involved
				0	127	Not at all Involved
					12	Missing
	HIRSIGS	1.06	1.172	Obtaining signatures		
				3	40	Highly Involved
				2	31	Very Involved
				1	45	Somewhat Involved
				0	103	Not at all Involved
					12	Missing
	HIRNTP	1.02	1.208	Issuing the notice to proceed		
				3	46	Highly Involved
				2	20	Very Involved
				1	42	Somewhat Involved
				0	111	Not at all Involved
					12	Missing
Q7b	**For each of the following steps in hiring consultants, in which do you experience significant administrative delay?**					
	DELID	.43	.539	Identifying which projects will use consultants		
				2	4	Always experiences significant administrative delay
				1	74	Occasionally experiences significant administrative delay
				0	111	Never experiences significant administrative delay
					42	Missing
	DELAUTH	.61	.580	Requesting authorization to use consultants on a project		
				2	9	Always experiences significant administrative delay
				1	99	Occasionally experiences significant administrative delay
				0	83	Never experiences significant administrative delay
					40	Missing
	DELAPPRO	.56	.667	Approving a request by an office to hire a consultant		
				2	16	Always experiences significant administrative delay
				1	65	Occasionally experiences significant administrative delay
				0	89	Never experiences significant administrative delay
					61	Missing

	DELRFQ	.50	.613	Preparing an RFQ for consultants		
				2	10	Always experiences significant administrative delay
				1	65	Occasionally experiences significant administrative delay
				0	95	Never experiences significant administrative delay
					62	Missing
	DELCOM	.33	.510	Serving on Selection Committee Reviews of Statements of Qualification		
				2	3	Always experiences significant administrative delay
				1	52	Occasionally experiences significant administrative delay
				0	115	Never experiences significant administrative delay
					61	Missing
	DELPAN	.27	.488	Serving on a consultant review panel		
				2	3	Always experiences significant administrative delay
				1	41	Occasionally experiences significant administrative delay
				0	123	Never experiences significant administrative delay
					64	Missing
	DELSCOPE	.36	.539	Determining the Scope of Work		
				2	6	Always experiences significant administrative delay
				1	56	Occasionally experiences significant administrative delay
				0	119	Never experiences significant administrative delay
					50	Missing
	DELFEE	.52	.623	Determining fees		
				2	11	Always experiences significant administrative delay
				1	66	Occasionally experiences significant administrative delay
				0	90	Never experiences significant administrative delay
					64	Missing
	DELOTHOF	.66	.650	Getting other GDOT offices to review the proposal		
				2	17	Always experiences significant administrative delay
				1	80	Occasionally experiences significant administrative delay
				0	73	Never experiences significant administrative delay
					61	Missing
	DELAUDIT	.77	.763	Complying with the pre-award audit		
				2	33	Always experiences significant administrative delay
				1	58	Occasionally experiences significant administrative delay
				0	70	Never experiences significant administrative delay
					70	Missing

	DELWRITE	.49	.595	Writing the final contract		
				2	8	Always experiences significant administrative delay
				1	65	Occasionally experiences significant administrative delay
				0	91	Never experiences significant administrative delay
					67	Missing
	DELOCD	.41	.542	Coordinating a project under a task order with the Office of Consultant Design		
				2	4	Always experiences significant administrative delay
				1	60	Occasionally experiences significant administrative delay
				0	102	Never experiences significant administrative delay
					65	Missing
	DELSIGS	.72	.723	Obtaining signatures		
				2	26	Always experiences significant administrative delay
				1	72	Occasionally experiences significant administrative delay
				0	74	Never experiences significant administrative delay
					59	Missing
	DELNTP	.33	.507	Issuing the notice to proceed		
				2	3	Always experiences significant administrative delay
				1	51	Occasionally experiences significant administrative delay
				0	119	Never experiences significant administrative delay
					58	Missing
Q8	**How important are the following factors in your office's decision to hire a particular consultant?**					
	FACREL	2.36	0.719	A good prior working relationship with the consultant		
				3	90	Very Important
				2	82	Somewhat Important
				1	11	Somewhat Unimportant
				0	6	Not at all Important
				9	27	No Opinion
					15	Missing
	FACQUAL	2.84	.409	A consultant's qualifications		
				3	167	Very Important
				2	24	Somewhat Important
				1	3	Somewhat Unimportant
				0		Not at all Important
				9	22	No Opinion
					15	Missing

	FACREP	2.47	.635	A consultant with a good reputation		
				3	104	Very Important
				2	75	Somewhat Important
				1	11	Somewhat Unimportant
				0	1	Not at all Important
				9	25	No Opinion
					15	Missing
	FACFORM	1.24	.991	Presence of former GDOT staff on consultant's team		
				3	20	Very Important
				2	60	Somewhat Important
				1	49	Somewhat Unimportant
				0	54	Not at all Important
				9	33	No Opinion
					15	Missing
Q9	**When hiring a consultant, what sources of information are important to you in assessing the consultant's capabilities and qualifications?**					
	INFWORD1	.58	.494	Word-of-mouth from GDOT employees in my office		
				1	127	Important
				0	88	Not Important
					16	Missing
	INFWORD2	.52	.501	Word-of-mouth from GDOT employees in other offices		
				1	112	Important
				0	103	Not Important
					16	Missing
	INFEXP	.86	.353	Previous experiences with the consultant		
				1	182	Important
				0	33	Not Important
					16	Missing
	INFEVAL	.26	.440	GDOT evaluation forms		
				1	54	Important
				0	161	Not Important
					16	Missing
	INFRECRD	.29	.457	GDOT project records		
				1	62	Important
				0	153	Not Important
					16	Missing

	INFINFO	.08	.275	GDOT information systems (e.g., TPro)		
				1	17	Important
				0	198	Not Important
					16	Missing
	INFSELF	.48	.501	Self-reports from the consultants (e.g., statement of qualifications, proposal)		
				1	104	Important
				0	111	Not Important
					16	Missing
	INFREF	.54	.500	References		
				1	118	Important
				0	97	Not Important
					16	Missing
	INFOTH1	.12	.325	Others; please list		
				1	22	Important
				0	170	Not Important
					39	Missing
	INFOTH2			text		
Q10	**Please rate your level of agreement or disagreement with the following statements about using consultants that hire former GDOT employees to work on GDOT projects.**					
	FRMGOOD	2.08	.823	Hiring consultants that employ former GDOT staff is good for GDOT		
				3	64	Strongly Agree
				2	105	Somewhat Agree
				1	18	Somewhat Disagree
				0	13	Strongly Disagree
				9	18	No Opinion
					13	Missing
	FRMMAIN	1.92	.862	Hiring consultants that employ former GDOT staff helps maintain GDOT's way of doing things		
				3	54	Strongly Agree
				2	94	Somewhat Agree
				1	38	Somewhat Disagree
				0	14	Strongly Disagree
				9	18	No Opinion
					13	Missing

	FRMFRND	1.04	.898	I have friendlier relationships with consultants that employ former GDOT staff than those that do not employ former GDOT staff.		
				3	12	Strongly Agree
				2	38	Somewhat Agree
				1	70	Somewhat Disagree
				0	55	Strongly Disagree
				9	43	No Opinion
					13	Missing
	FRMCURVE	1.99	.853	consultants that employ former GDOT staff have less to learn about GDOT practices and procedures than those that do not employ former GDOT staff		
				3	61	Strongly Agree
				2	101	Somewhat Agree
				1	34	Somewhat Disagree
				0	13	Strongly Disagree
				9	9	No Opinion
					13	Missing
	FRMCAPAB	1.84	.842	I know the capabilities of consultants that are former GDOT employees better than consultants who have never worked at GDOT		
				3	39	Strongly Agree
				2	98	Somewhat Agree
				1	40	Somewhat Disagree
				0	15	Strongly Disagree
				9	26	No Opinion
					13	Missing
	FRMENCRG	.43	.762	GDOT management encourages me to employ firms with former GDOT employees		
				3	3	Strongly Agree
				2	15	Somewhat Agree
				1	26	Somewhat Disagree
				0	105	Strongly Disagree
				9	68	No Opinion
					14	Missing

III. Managing Consultants at GDOT *This section Seeks information on how GDOT manages consultants*

Q11	**How often do you use the following channels to communicate with consultants?**					
	CHNTEL	3.97	1.231	Telephone calls		
				5	74	Daily
				4	99	Weekly
				3	20	Monthly
				2	6	Quarterly
				1	0	Yearly
				0	13	Rarely
					19	Missing
	CHNCALL	1.14	1.517	Conference calls		
				5	2	Daily
				4	14	Weekly
				3	37	Monthly
				2	20	Quarterly
				1	3	Yearly
				0	121	Rarely
					34	Missing
	CHNFACE	3.16	1.253	Face-to-face meetings		
				5	30	Daily
				4	55	Weekly
				3	80	Monthly
				2	31	Quarterly
				1	1	Yearly
				0	14	Rarely
					20	Missing
	CHNEMAIL	3.48	1.800	E-mail		
				5	74	Daily
				4	71	Weekly
				3	19	Monthly
				2	3	Quarterly
				1	2	Yearly
				0	38	Rarely
					24	Missing

	CHNFAX	2.10	1.738	Fax		
				5	10	Daily
				4	41	Weekly
				3	54	Monthly
				2	19	Quarterly
				1	2	Yearly
				0	72	Rarely
					33	Missing
	CHNUSPS	2.13	1.756	U.S. Postal Service mail		
				5	13	Daily
				4	39	Weekly
				3	58	Monthly
				2	19	Quarterly
				1		Yearly
				0	74	Rarely
					28	Missing
	CHNOCD	.88	1.622	Firm’s OCD mailbox		
				5	10	Daily
				4	13	Weekly
				3	13	Monthly
				2	9	Quarterly
				1	1	Yearly
				0	140	Rarely
					45	Missing
	CHNOTH1	1.76	2.247	Other		
				5	8	Daily
				4	3	Weekly
				3		Monthly
				2	2	Quarterly
				1		Yearly
				0	18	Rarely
					200	Missing
	CHNOTH2			text		The other channel that the respondent uses to communicate with consultants.

Q12	**Over the course of a project, how important or unimportant are the following procedures in your efforts to manage consultants?**					
	PROPDP	3.49	.780	Ensuring compliance with the Project Development Plan (PDP)		
				4	94	Highly Important
				3	43	Important
				2	11	Somewhat Important
				1	3	Not Very Important
				0	1	Not Important At All
				9	63	Not Applicable
					16	Missing
	PROPPG	3.16	.918	Ensuring that the Plan Presentation Guide is followed (PPG)		
				4	62	Highly Important
				3	52	Important
				2	24	Somewhat Important
				1	5	Not Very Important
				0	2	Not Important At All
				9	70	Not Applicable
					16	Missing
	PROEXPND	3.00	.930	Reviewing budget expenditures		
				4	55	Highly Important
				3	63	Important
				2	31	Somewhat Important
				1	10	Not Very Important
				0	1	Not Important At All
				9	56	Not Applicable
					15	Missing
	PROINV	3.12	.919	Reviewing consultant invoices		
				4	66	Highly Important
				3	72	Important
				2	18	Somewhat Important
				1	12	Not Very Important
				0	1	Not Important At All
				9	47	Not Applicable
					15	Missing
	PROPROG	2.94	.916	Reviewing periodic written progress reports from consultant		
				4	50	Highly Important
				3	69	Important
				2	33	Somewhat Important
				1	13	Not Very Important
				0		Not Important At All
				9	51	Not Applicable
					15	Missing

	PROTERM	2.80	.979	Reviewing contract terms		
				4	47	Highly Important
				3	60	Important
				2	46	Somewhat Important
				1	16	Not Very Important
				0	1	Not Important At All
				9	45	Not Applicable
					16	Missing
	PROSCHED	3.34	.871	Monitoring the project schedule		
				4	101	Highly Important
				3	50	Important
				2	23	Somewhat Important
				1	8	Not Very Important
				0		Not Important At All
				9	34	Not Applicable
					15	Missing
	PROXLIST	3.11	.831	Reviewing checklists of deliverables		
				4	60	Highly Important
				3	65	Important
				2	33	Somewhat Important
				1	5	Not Very Important
				0		Not Important At All
				9	52	Not Applicable
					16	Missing
	PROQCP	2.91	.902	Monitoring the Quality Control Plan		
				4	43	Highly Important
				3	57	Important
				2	34	Somewhat Important
				1	10	Not Very Important
				0		Not Important At All
				9	69	Not Applicable
					18	Missing
	PROPMP	2.62	.900	Reviewing the Project Management Plan		
				4	25	Highly Important
				3	57	Important
				2	49	Somewhat Important
				1	13	Not Very Important
				0	1	Not Important At All
				9	67	Not Applicable
					19	Missing

	PROLOG	2.08	.962	Reviewing the Correspondence Log		
				4	14	Highly Important
				3	30	Important
				2	66	Somewhat Important
				1	36	Not Very Important
				0	4	Not Important At All
				9	63	Not Applicable
					18	Missing
	PRODBE	2.15	1.020	Reviewing Quarterly DBE reports		
				4	12	Highly Important
				3	45	Important
				2	47	Somewhat Important
				1	35	Not Very Important
				0	6	Not Important At All
				9	69	Not Applicable
					17	Missing
	PROEDAT	2.72	1.045	Ensuring compliance with GDOT Electronic Data Guidelines		
				4	36	Highly Important
				3	48	Important
				2	33	Somewhat Important
				1	18	Not Very Important
				0	2	Not Important At All
				9	76	Not Applicable
					18	Missing
	PRODESG	3.42	.798	Ensuring conformity to GDOT design criteria, rules, regulations, and policies		
				4	103	Highly Important
				3	51	Important
				2	18	Somewhat Important
				1	3	Not Very Important
				0	1	Not Important At All
				9	38	Not Applicable
					17	Missing

	PROTPRO	2.54	1.023	Reviewing status of task completion in TPro		
				4	22	Highly Important
				3	54	Important
				2	37	Somewhat Important
				1	16	Not Very Important
				0	5	Not Important At All
				9	79	Not Applicable
					18	Missing
	PROCONC	2.94	.991	Reviewing the Concept Report		
				4	45	Highly Important
				3	58	Important
				2	27	Somewhat Important
				1	10	Not Very Important
				0	3	Not Important At All
				9	71	Not Applicable
					17	Missing
	PROPFPR	3.28	.882	Preliminary Field Plan Review		
				4	77	Highly Important
				3	49	Important
				2	17	Somewhat Important
				1	6	Not Very Important
				0	1	Not Important At All
				9	63	Not Applicable
					18	Missing
	PROFFPR	3.39	0.843	Final Field Plan Review		
				4	86	Highly Important
				3	45	Important
				2	14	Somewhat Important
				1	5	Not Very Important
				0	1	Not Important At All
				9	63	Not Applicable
					17	Missing
	PROMATST	2.36	1.080	Reviewing materials tests		
				4	21	Highly Important
				3	39	Important
				2	44	Somewhat Important
				1	18	Not Very Important
				0	7	Not Important At All
				9	81	Not Applicable
					21	Missing

	PROINSP	2.23	1.081	Reviewing inspection reports and daily logs		
				4	20	Highly Important
				3	35	Important
				2	41	Somewhat Important
				1	33	Not Very Important
				0	4	Not Important At All
				9	79	Not Applicable
					19	Missing
	PROFORM	2.56	.983	Completing Consultant Performance Evaluation		
				4	30	Highly Important
				3	64	Important
				2	57	Somewhat Important
				1	15	Not Very Important
				0	5	Not Important At All
				9	41	Not Applicable
					19	Missing
	PROVISIT	2.65	.948	Site visits		
				4	35	Highly Important
				3	70	Important
				2	54	Somewhat Important
				1	17	Not Very Important
				0	2	Not Important At All
				9	28	Not Applicable
					25	Missing
	PROOTH1	2.71	1.604	Other		
				4	3	Highly Important
				3	2	Important
				2		Somewhat Important
				1	1	Not Very Important
				0	1	Not Important At All
				9	13	Not Applicable
					211	Missing
	PROOTH2			text		The other procedure that is important in the respondent's efforts to manage consultants over the course of a project.
Q13	**What percentage of your time is spent in direct communications (e.g., phone calls, e-mails, voicemails, and meetings) with consultants?**					
	PERTIME	20.04	20.11	num	20	Missing

Q14	**Please indicate how important or unimportant the following attributes are for an effective relationship with a consultant. *"A consultant should…"***					
	SHDEXPRT	2.42	.664	Be an expert in a technical or specialized area		
				3	105	Very Important
				2	93	Somewhat Important
				1	15	Somewhat Unimportant
				0	2	Not at all Important
				9	1	No Opinion
					15	Missing
	SHDCOST	1.59	.984	Cost less to perform work than GDOT		
				3	38	Very Important
				2	71	Somewhat Important
				1	53	Somewhat Unimportant
				0	33	Not at all Important
				9	20	No Opinion
					16	Missing
	SHDSTAFF	2.57	.572	Have sufficient staff to be able to handle unanticipated work changes		
				3	126	Very Important
				2	75	Somewhat Important
				1	8	Somewhat Unimportant
				0		Not at all Important
				9	8	No Opinion
					14	Missing
	SHDFAIR	2.62	.617	Charge a fair price		
				3	140	Very Important
				2	56	Somewhat Important
				1	8	Somewhat Unimportant
				0	2	Not at all Important
				9	10	No Opinion
					15	Missing
	SHDFLEX	2.58	.543	Be a flexible organization in adapting to work changes		
				3	127	Very Important
				2	81	Somewhat Important
				1	5	Somewhat Unimportant
				0		Not at all Important
				9	4	No Opinion
					14	Missing

	SHDKNORP	2.70	.530	Know GDOT rules and procedures		
				3	157	Very Important
				2	52	Somewhat Important
				1	5	Somewhat Unimportant
				0	1	Not at all Important
				9	2	No Opinion
					14	Missing
	SHDFOLLO	2.85	.386	Follow GDOT rules and procedures		
				3	184	Very Important
				2	28	Somewhat Important
				1	2	Somewhat Unimportant
				0		Not at all Important
				9	3	No Opinion
					14	Missing
	SHDTIES	1.68	.857	Have good professional ties to the consulting community		
				3	30	Very Important
				2	96	Somewhat Important
				1	54	Somewhat Unimportant
				0	20	Not at all Important
				9	17	No Opinion
					14	Missing
	SHDREAL	1.69	.926	Contact me only for real problems		
				3	38	Very Important
				2	84	Somewhat Important
				1	52	Somewhat Unimportant
				0	25	Not at all Important
				9	16	No Opinion
					16	Missing
	SHDRESRC	2.48	.608	Be resourceful		
				3	111	Very Important
				2	93	Somewhat Important
				1	8	Somewhat Unimportant
				0	2	Not at all Important
				9	1	No Opinion
					16	Missing
	SHDKNOMY	1.22	.836	Know my working style well		
				3	11	Very Important
				2	62	Somewhat Important
				1	82	Somewhat Unimportant
				0	40	Not at all Important
				9	20	No Opinion
					16	Missing

	SHDDO	2.05	.801	Do what I say		
				3	59	Very Important
				2	100	Somewhat Important
				1	29	Somewhat Unimportant
				0	9	Not at all Important
				9	17	No Opinion
					17	Missing
	SHDDIFF	1.88	.903	Know how my office's requirements differ from other offices in GDOT		
				3	51	Very Important
				2	89	Somewhat Important
				1	40	Somewhat Unimportant
				0	17	Not at all Important
				9	20	No Opinion
					14	Missing
	SHDUNDME	1.82	.937	Understand that he/she is working for me		
				3	48	Very Important
				2	88	Somewhat Important
				1	37	Somewhat Unimportant
				0	22	Not at all Important
				9	22	No Opinion
					14	Missing
	SHDIDEA	2.14	.789	Give me better ideas on how things could be done		
				3	75	Very Important
				2	100	Somewhat Important
				1	31	Somewhat Unimportant
				0	7	Not at all Important
				9	4	No Opinion
					14	Missing
	SHDCLOSE	1.81	.827	Form a close working relationship with me		
				3	39	Very Important
				2	105	Somewhat Important
				1	48	Somewhat Unimportant
				0	15	Not at all Important
				9	10	No Opinion
					14	Missing
	SHDCHAN	1.75	.915	Channel all communication to me through one person at the consultant's firm		
				3	43	Very Important
				2	89	Somewhat Important
				1	52	Somewhat Unimportant
				0	22	Not at all Important
				9	11	No Opinion
					14	Missing

	SHDMSUBS	2.21	.864	Manage all the communication with sub-consultants for a project		
				3	86	Very Important
				2	67	Somewhat Important
				1	33	Somewhat Unimportant
				0	10	Not at all Important
				9	20	No Opinion
					15	Missing
	SHDHANDL	.81	.888	Handle internal GDOT management and political issues		
				3	7	Very Important
				2	35	Somewhat Important
				1	54	Somewhat Unimportant
				0	82	Not at all Important
				9	39	No Opinion
					14	Missing
	SHDDELVR	2.77	.498	Do what they say they will do		
				3	165	Very Important
				2	40	Somewhat Important
				1	1	Somewhat Unimportant
				0	2	Not at all Important
				9	8	No Opinion
					15	Missing
	SHDUNDGO	2.42	.657	Understand GDOT's mission and goals		
				3	106	Very Important
				2	91	Somewhat Important
				1	13	Somewhat Unimportant
				0	2	Not at all Important
				9	4	No Opinion
					15	Missing
	SHDLOYAL	2.11	.886	Be loyal to GDOT and me		
				3	77	Very Important
				2	78	Somewhat Important
				1	29	Somewhat Unimportant
				0	12	Not at all Important
				9	20	No Opinion
					15	Missing
	SHDSOUND	1.56	1.018	Be a good sounding board		
				3	37	Very Important
				2	70	Somewhat Important
				1	41	Somewhat Unimportant
				0	34	Not at all Important
				9	34	No Opinion
					15	Missing

Q15	**How accurately do the following phrases describe your experiences with consultants?**					
	EXPCLEAR	2.25	.650	There are clear communications between the consultant and my office		
				3	74	Strongly Agree
				2	121	Somewhat Agree
				1	16	Somewhat Disagree
				0	3	Strongly Disagree
				9	3	No Opinion
					14	Missing
	EXPTEAM	2.07	.772			There is a team atmosphere between GDOT staff and consultants
				3	61	Strongly Agree
				2	113	Somewhat Agree
				1	30	Somewhat Disagree
				0	8	Strongly Disagree
				9	5	No Opinion
					14	Missing
	EXPGOAL	2.21	.762	Goals and expectations of the consultant are clearly defined by GDOT		
				3	81	Strongly Agree
				2	100	Somewhat Agree
				1	25	Somewhat Disagree
				0	6	Strongly Disagree
				9	4	No Opinion
					15	Missing
	EXPTRUST	1.85	.733	I trust consultants		
				3	29	Strongly Agree
				2	128	Somewhat Agree
				1	37	Somewhat Disagree
				0	12	Strongly Disagree
				9	10	No Opinion
					15	Missing
	EXPLAX	1.26	.889	My office is more lenient with consultants with whom it has prior working relationships and trust		
				3	10	Strongly Agree
				2	69	Somewhat Agree
				1	58	Somewhat Disagree
				0	45	Strongly Disagree
				9	34	No Opinion
					15	Missing

	EXPVISON	1.90	.797	Upper management has a vision for how consultants fit into the GDOT mission		
				3	37	Strongly Agree
				2	101	Somewhat Agree
				1	28	Somewhat Disagree
				0	13	Strongly Disagree
				9	38	No Opinion
					14	Missing
	EXPRULES	1.95	.805	GDOT has an appropriate level of rules and procedures for consultants to follow		
				3	45	Strongly Agree
				2	113	Somewhat Agree
				1	26	Somewhat Disagree
				0	14	Strongly Disagree
				9	19	No Opinion
					14	Missing
	EXPPOS	2.02	.721	My experience with consultants has generally been positive		
				3	47	Strongly Agree
				2	136	Somewhat Agree
				1	22	Somewhat Disagree
				0	10	Strongly Disagree
				9	2	No Opinion
					14	Missing
	EXPTRAIN	1.11	.901	Sometimes I don't feel I have the necessary training to best manage consultants		
				3	11	Strongly Agree
				2	57	Somewhat Agree
				1	72	Somewhat Disagree
				0	58	Strongly Disagree
				9	19	No Opinion
					14	Missing
	EXPIRES1	1.80	1.049	I am responsible for the quality of the consultant's work		
				3	63	Strongly Agree
				2	86	Somewhat Agree
				1	27	Somewhat Disagree
				0	37	Strongly Disagree
				9	4	No Opinion
					14	Missing

	EXPIRES2	2.22	.824	I am responsible for ensuring that consultants are fully compliant with GDOT rules and procedures		
				3	87	Strongly Agree
				2	95	Somewhat Agree
				1	19	Somewhat Disagree
				0	11	Strongly Disagree
				9	5	No Opinion
					14	Missing
	EXPCLPOL	1.35	.940	GDOT has clear policies on the types of projects that should use consultants		
				3	21	Strongly Agree
				2	55	Somewhat Agree
				1	60	Somewhat Disagree
				0	35	Strongly Disagree
				9	46	No Opinion
					14	Missing
	EXPEVEN	1.77	.862	GDOT likes to distribute work evenly throughout the qualified consultant community		
				3	28	Strongly Agree
				2	71	Somewhat Agree
				1	37	Somewhat Disagree
				0	12	Strongly Disagree
				9	69	No Opinion
					14	Missing
	EXPFIT	1.63	.915	I understand how the use of consultants fits within GDOT's strategic plan.		
				3	24	Strongly Agree
				2	95	Somewhat Agree
				1	34	Somewhat Disagree
				0	29	Strongly Disagree
				9	35	No Opinion
					14	Missing
	EXPCAPAB	1.79	.823	GDOT has the internal administrative capabilities to manage consultants		
				3	34	Strongly Agree
				2	98	Somewhat Agree
				1	41	Somewhat Disagree
				0	16	Strongly Disagree
				9	26	No Opinion
					16	Missing

	EXPGUIDE	1.59	.862	I get clear guidance and direction on how I should manage consultants		
				3	24	Strongly Agree
				2	99	Somewhat Agree
				1	55	Somewhat Disagree
				0	28	Strongly Disagree
				9	11	No Opinion
					14	Missing
Q16	**This question presents opposite characteristics of GDOT-consultant relationships. Please circle the number between the opposites that reflects <u>your</u> relationship with consultants with whom you work.**					
	RELPART	2.33	.824	1	31	Partner
				2	101	Somewhat Partner
				3	69	Neither Partner Nor Outsider
				4	15	Somewhat Outsider
				5	1	Outsider
					14	Missing
	RELOPEN	2.40	.787	1	24	Open and Transparent.
				2	101	Somewhat Open and Transparent
				3	75	Neither Open Nor Closed
				4	17	Somewhat Closed and on a need-to know-basis
				5		Closed and on a need-to know-basis
					14	Missing
	RELCOOP	2.05	.793	1	53	Cooperative
				2	109	Somewhat Cooperative
				3	48	Neither Cooperative Nor Adversarial.
				4	6	Somewhat Adversarial
				5	1	Adversarial
					14	Missing
	RELFLEX	2.21	.842	1	38	Flexible
				2	108	Somewhat Flexible
				3	56	Neither Flexible Nor Inflexible
				4	11	Somewhat Inflexible
				5	2	Inflexible
					16	Missing
	RELIMPRV	2.25	.799	1	36	Improving
				2	101	Somewhat Improving
				3	73	Neither Improving Nor Declining
				4	3	Somewhat Declining
				5	3	Declining
					15	Missing

	RELINVOV	2.07	.806	1	54	Involved
				2	104	Somewhat Involved
				3	50	Neither Involved Nor Distant
				4	9	Somewhat Distant
				5		Distant
					14	Missing
	RELRSPCT	1.89	.771	1	73	Respectful
				2	102	Somewhat Respectful
				3	38	Neither Respectful Nor Disrespectful
				4	3	Somewhat Disrespectful
				5	1	Disrespectful
					14	Missing
	RELSOCL	2.99	.932	1	15	Social
				2	43	Somewhat Social
				3	100	Neither Social Nor Business
				4	51	Somewhat Business
				5	8	All Business
					14	Missing
	RELFRND	2.49	.723	1	20	Friend
				2	80	Somewhat Friend
				3	109	Neither Friend Nor Enemy
				4	7	Somewhat Enemy
				5	1	Enemy
					14	Missing
	RELINFRM	2.75	.788	1	14	Informal
				2	57	Somewhat Informal
				3	116	Neither Informal Nor Formal
				4	27	Somewhat Formal
				5	1	Formal
					16	Missing
Q17	**In your experience in working with GDOT consultants, please indicate the frequency in which you personally are also likely to interact with these consultants in the following environments:**					
	FRQMEET	1.78	1.252	Professional organization meetings		
				4	22	Frequently
				3	45	Somewhat Frequently
				2	56	Somewhat Infrequently
				1	54	Infrequently
				0	39	Never
					15	Missing

	FRQGROUP	1.50	1.324	GDOT consultant relations groups (GQI, etc.)		
				4	17	Frequently
				3	41	Somewhat Frequently
				2	40	Somewhat Infrequently
				1	48	Infrequently
				0	70	Never
					15	Missing
	FRQTRAIN	2.26	1.097	Training sessions		
				4	20	Frequently
				3	85	Somewhat Frequently
				2	63	Somewhat Infrequently
				1	30	Infrequently
				0	19	Never
					14	Missing
	FRQALUM	.53	.892	Alumni groups		
				4	1	Frequently
				3	12	Somewhat Frequently
				2	17	Somewhat Infrequently
				1	41	Infrequently
				0	145	Never
					15	Missing
	FRQSERVE	.52	.847	Service organizations		
				4	2	Frequently
				3	8	Somewhat Frequently
				2	18	Somewhat Infrequently
				1	47	Infrequently
				0	142	Never
					14	Missing
	FRQCIVIC	.45	.804	Civic groups		
				4	1	Frequently
				3	6	Somewhat Frequently
				2	17	Somewhat Infrequently
				1	40	Infrequently
				0	153	Never
					14	Missing
	FRQSPORT	.37	.753	Sports clubs		
				4	1	Frequently
				3	5	Somewhat Frequently
				2	13	Somewhat Infrequently
				1	33	Infrequently
				0	164	Never
					15	Missing

	FRQYOUTH	.29	.670	Youth groups		
				4	1	Frequently
				3	3	Somewhat Frequently
				2	13	Somewhat Infrequently
				1	24	Infrequently
				0	175	Never
					15	Missing
	FRQRELIG	.42	.809	Religious organizations		
				4	2	Frequently
				3	6	Somewhat Frequently
				2	18	Somewhat Infrequently
				1	30	Infrequently
				0	160	Never
					15	Missing
	FRQSOCL	.75	.925	Social events		
				4	2	Frequently
				3	9	Somewhat Frequently
				2	36	Somewhat Infrequently
				1	56	Infrequently
				0	114	Never
					14	Missing
IV Human Resources and Consultant Management at GDOT						
Q18a	**Please indicate your level of agreement or disagreement with the statement, "GDOT employees who manage consultants are well trained in …"**					
	WELCONBZ	1.36	.824	Understanding how consultants do business		
				3	10	Strongly Agree
				2	86	Somewhat Agree
				1	71	Somewhat Disagree
				0	38	Strongly Disagree
				9	13	No opinion
					13	Missing
	WELADMIN	1.28	.817	Administrative procedures for consultant procurement		
				3	9	Strongly Agree
				2	70	Somewhat Agree
				1	78	Somewhat Disagree
				0	38	Strongly Disagree
				9	24	No opinion
					12	Missing

	WELFUND	1.19	.798	Funding and budgetary requirements		
				3	8	Strongly Agree
				2	58	Somewhat Agree
				1	90	Somewhat Disagree
				0	41	Strongly Disagree
				9	21	No opinion
					13	Missing
	WELCONTR	1.20	.865	Administering different types of contracts (e.g., cost plus, lump sum, task order)		
				3	11	Strongly Agree
				2	60	Somewhat Agree
				1	74	Somewhat Disagree
				0	44	Strongly Disagree
				9	29	No opinion
					13	Missing
	WELPMP	1.88	.720	Project management		
				3	32	Strongly Agree
				2	125	Somewhat Agree
				1	37	Somewhat Disagree
				0	11	Strongly Disagree
				9	14	No opinion
					12	Missing
	WELNEG	1.30	.871			Negotiation
				3	16	Strongly Agree
				2	65	Somewhat Agree
				1	75	Somewhat Disagree
				0	37	Strongly Disagree
				9	26	No opinion
					12	Missing
	WELLEAD	1.74	.778	Leadership		
				3	27	Strongly Agree
				2	109	Somewhat Agree
				1	47	Somewhat Disagree
				0	16	Strongly Disagree
				9	20	No opinion
					12	Missing
	WELVERB	1.79	.749	Verbal skills		
				3	26	Strongly Agree
				2	116	Somewhat Agree
				1	42	Somewhat Disagree
				0	13	Strongly Disagree
				9	22	No opinion
					12	Missing

	WELWRITE	1.79	.740	Writing skills		
				3	25	Strongly Agree
				2	119	Somewhat Agree
				1	40	Somewhat Disagree
				0	13	Strongly Disagree
				9	21	No opinion
					13	Missing
	WELINTER	1.77	.730	Interpersonal skills		
				3	22	Strongly Agree
				2	115	Somewhat Agree
				1	47	Somewhat Disagree
				0	12	Strongly Disagree
				9	22	No opinion
					13	Missing
	WELREG	1.64	.842	Regulatory compliance		
				3	22	Strongly Agree
				2	94	Somewhat Agree
				1	47	Somewhat Disagree
				0	22	Strongly Disagree
				9	34	No opinion
					12	Missing
	WELAUDIT	1.10	.889	Auditing		
				3	9	Strongly Agree
				2	50	Somewhat Agree
				1	62	Somewhat Disagree
				0	52	Strongly Disagree
				9	46	No opinion
					12	Missing
	WELCMAN	1.55	.845	Contract management		
				3	19	Strongly Agree
				2	95	Somewhat Agree
				1	53	Somewhat Disagree
				0	26	Strongly Disagree
				9	26	No opinion
					12	Missing

	WELQAQC	1.66	.874	Quality assurance/Quality control		
				3	25	Strongly Agree
				2	102	Somewhat Agree
				1	41	Somewhat Disagree
				0	25	Strongly Disagree
				9	26	No opinion
					12	Missing
	WELACC	1.44	.881	Invoices/Accounting		
				3	16	Strongly Agree
				2	81	Somewhat Agree
				1	56	Somewhat Disagree
				0	33	Strongly Disagree
				9	30	No opinion
					15	Missing
	WELINFO	1.42	.924	GDOT information systems for managing consultants (e.g., Tpro)		
				3	16	Strongly Agree
				2	77	Somewhat Agree
				1	48	Somewhat Disagree
				0	38	Strongly Disagree
				9	39	No opinion
					13	Missing
	WELTRBL	1.78	.814	Troubleshooting common issues		
				3	29	Strongly Agree
				2	106	Somewhat Agree
				1	39	Somewhat Disagree
				0	18	Strongly Disagree
				9	26	No opinion
					13	Missing
	WELSUPP	1.60	.844	Issuance of supplemental agreements		
				3	21	Strongly Agree
				2	89	Somewhat Agree
				1	51	Somewhat Disagree
				0	22	Strongly Disagree
				9	35	No opinion
					13	Missing
	WELKNOW	1.77	.750	Knowledge of technical skill being provided by consultant		
				3	25	Strongly Agree
				2	115	Somewhat Agree
				1	45	Somewhat Disagree
				0	12	Strongly Disagree
				9	21	No opinion
					13	Missing

Q18b	**In which of the following areas has GDOT provided you training or sponsored you to receive training from an outside source?**					
	RCVCONBZ	.05	.224	Understanding how consultants do business		
				1	11	Yes
				0	207	No
					13	Missing
	RCVADMIN	.10	.296	Administrative procedures for consultant procurement		
				1	22	Yes
				0	195	No
					14	Missing
	RCVFUND	.08	.268	Funding and budgetary requirements		
				1	18	Yes
				0	199	No
					14	Missing
	RCVCONTR	.14	.347	Administering different types of contracts (e.g., cost plus, lump sum, task order)		
				1	30	Yes
				0	188	No
					13	Missing
	RCVPMP	.51	.501	Project management		
				1	113	Yes
				0	105	No
					13	Missing
	RCVNEG	.20	.400	Negotiation		
				1	45	Yes
				0	172	No
					14	Missing
	RCVLEAD	.63	.485	Leadership		
				1	135	Yes
				0	81	No
					15	Missing
	RCVVERB	.51	.501	Verbal skills		
				1	111	Yes
				0	106	No
					14	Missing
	RCVWRITE	.51	.501	Writing skills		
				1	111	Yes
				0	106	No
					14	Missing

	RCVINTER	.52	.501	Interpersonal skills		
				1	111	Yes
				0	105	No
					15	Missing
	RCVREG	.31	.463	Regulatory compliance		
				1	66	Yes
				0	151	No
					14	Missing
	RCVAUDIT	.06	.234	Auditing		
				1	12	Yes
				0	205	No
					14	Missing
	RCVCMAN	.24	.426	Contract management		
				1	52	Yes
				0	164	No
					15	Missing
	RCVQAQC	.29	.456	Quality assurance/Quality control		
				1	63	Yes
				0	154	No
					14	Missing
	RCVACC	.14	.344	Invoices/accounting		
				1	33	Yes
				0	182	No
					16	Missing
	RCVINFO	.35	.477	GDOT information systems for managing consultants (e.g., Tpro)		
				1	74	Yes
				0	142	No
					15	Missing
	RCVTRBL	.25	.434	Troubleshooting common issues		
				1	52	Yes
				0	165	No
					14	Missing
	RCVSUPP	.26	.442	Issuance of supplemental agreements		
				1	58	Yes
				0	159	No
					14	Missing
	RCVKNOW	.22	.413	Knowledge of technical skill being provided by consultant		
				1	46	Yes
				0	171	No
					14	Missing
	RCVOTH1	.05	.224	Other		
				1	1	Yes

				0	19	No
					211	Missing
	RCVOTH2			text		The area in which GDOT has provided the respondent training or sponsored respondent to receive training from an outside source.
Q18c	**In which of the following areas would you like to receive training?**					
	WSHCONBZ	.79	.731	Understanding how consultants do business		
				2	38	Would strongly like to receive training
				1	84	Would like to receive training
				0	76	Would not like to receive training
					33	Missing
	WSHADMIN	.82	.749	Administrative procedures for consultant procurement		
				2	42	Would strongly like to receive training
				1	83	Would like to receive training
				0	77	Would not like to receive training
					29	Missing
	WSHFUND	.86	.739	Funding and budgetary requirements		
				2	43	Would strongly like to receive training
				1	91	Would like to receive training
				0	73	Would not like to receive training
					24	Missing
	WSHCONTR	.93	.757	Administering different types of contracts (e.g., cost plus, lump sum, task order)		
				2	50	Would strongly like to receive training
				1	86	Would like to receive training
				0	64	Would not like to receive training
					31	Missing
	WSHPMP	.94	.747	Project management		
				2	47	Would strongly like to receive training
				1	82	Would like to receive training
				0	56	Would not like to receive training
					46	Missing
	WSHNEG	.86	.743	Negotiation		
				2	45	Would strongly like to receive training
				1	83	Would like to receive training
				0	69	Would not like to receive training
					34	Missing
	WSHLEAD	.71	.724	Leadership		
				2	32	Would strongly like to receive training
				1	70	Would like to receive training
				0	81	Would not like to receive training
					48	Missing

	WSHVERB	.57	.700	Verbal skills		
				2	25	Would strongly like to receive training
				1	61	Would like to receive training
				0	101	Would not like to receive training
					44	Missing
	WSHWRITE	.57	.708	Writing skills		
				2	26	Would strongly like to receive training
				1	59	Would like to receive training
				0	102	Would not like to receive training
					44	Missing
	WSHINTER	.59	.693	Interpersonal skills		
				2	23	Would strongly like to receive training
				1	66	Would like to receive training
				0	97	Would not like to receive training
					45	Missing
	WSHREG	.80	.721	Regulatory compliance		
				2	35	Would strongly like to receive training
				1	84	Would like to receive training
				0	72	Would not like to receive training
					40	Missing
	WSHAUDIT	.61	.728	Auditing		
				2	29	Would strongly like to receive training
				1	64	Would like to receive training
				0	108	Would not like to receive training
					30	Missing
	WSHCMAN	.89	.716	Contract management		
				2	41	Would strongly like to receive training
				1	94	Would like to receive training
				0	60	Would not like to receive training
					36	Missing
	WSHQAQC	.81	.749	Quality assurance/Quality control		
				2	41	Would strongly like to receive training
				1	80	Would like to receive training
				0	77	Would not like to receive training
					33	Missing
	WSHACC	.62	.704	Invoices/accounting		
				2	26	Would strongly like to receive training
				1	74	Would like to receive training
				0	101	Would not like to receive training
					30	Missing

	WSHINFO	.80	.740	GDOT information systems for managing consultants (e.g., TPro)		
				2	38	Would strongly like to receive training
				1	82	Would like to receive training
				0	75	Would not like to receive training
					36	Missing
	WSHTRBL	.71	.727	Troubleshooting common issues		
				2	32	Would strongly like to receive training
				1	77	Would like to receive training
				0	85	Would not like to receive training
					37	Missing
	WSHSUPP	.68	.733	Issuance of supplemental agreements		
				2	32	Would strongly like to receive training
				1	71	Would like to receive training
				0	92	Would not like to receive training
					36	Missing
	WSHKNOW	.64	.689	Knowledge of technical skill being provided by consultant		
				2	25	Would strongly like to receive training
				1	78	Would like to receive training
				0	94	Would not like to receive training
					34	Missing
	WSHOTH1	.4054	.6855	Other		
				2	4	Would strongly like to receive training
				1	7	Would like to receive training
				0	26	Would not like to receive training
					194	Missing
	WSHOTH2			text		The area in which the respondent would like to receive training.
Q19	**To what extent do you agree or disagree with the following statements about consultant management training?**					
	TRNEFF	1.44	.875	GDOT consultant management training is effective		
				3	11	Strongly Agree
				2	53	Somewhat Agree
				1	41	Somewhat Disagree
				0	19	Strongly Disagree
				9	93	No Opinion
					14	Missing

	TRNCONS	1.27	.822	Firms that provide consultant services receive sufficient training in GDOT processes and procedures		
				3	10	Strongly Agree
				2	56	Somewhat Agree
				1	71	Somewhat Disagree
				0	31	Strongly Disagree
				9	50	No Opinion
					13	Missing
	TRNONJOB	1.32	.838	I prefer to learn consultant management issues while on the job, rather than in training		
				3	14	Strongly Agree
				2	67	Somewhat Agree
				1	81	Somewhat Disagree
				0	32	Strongly Disagree
				9	24	No Opinion
					13	Missing

	TRNTIME	1.26	.792	Available GDOT staff time for completing training is sufficient		
				3	5	Strongly Agree
				2	64	Somewhat Agree
				1	68	Somewhat Disagree
				0	32	Strongly Disagree
				9	46	No Opinion
					16	Missing
Q20	**To what extent do you agree or disagree with the following statements about consultant usages at GDOT?**					
	CONFEES	1.38	.807	For the most part, consultant fees are accurate reflections of work performed		
				3	7	Strongly Agree
				2	81	Somewhat Agree
				1	58	Somewhat Disagree
				0	27	Strongly Disagree
				9	44	No Opinion
					14	Missing
	CONSUPUS	1.51	.942	Supplemental agreements are caused by GDOT more than by consultant requests		
				3	21	Strongly Agree
				2	67	Somewhat Agree
				1	39	Somewhat Disagree
				0	28	Strongly Disagree
				9	62	No Opinion
					14	Missing

	CONSUPTH	2.03	.758	Supplemental agreements are a common occurrence in contracts with consultants		
				3	39	Strongly Agree
				2	82	Somewhat Agree
				1	27	Somewhat Disagree
				0	5	Strongly Disagree
				9	64	No Opinion
					14	Missing
	CONDEAD	1.87	.716	My office adheres strictly to project deadlines		
				3	32	Strongly Agree
				2	110	Somewhat Agree
				1	47	Somewhat Disagree
				0	5	Strongly Disagree
				9	22	No Opinion
					15	Missing
	CONONTIM	1.31	.762	My office cares more about completing a project on time than adhering to budgetary constraints		
				3	7	Strongly Agree
				2	63	Somewhat Agree
				1	81	Somewhat Disagree
				0	23	Strongly Disagree
				9	42	No Opinion
					15	Missing
	CONPZREL	.62	.648	My office cares more about maintaining positive relationships with consultants than adhering to contract terms		
				3		Strongly Agree
				2	19	Somewhat Agree
				1	80	Somewhat Disagree
				0	86	Strongly Disagree
				9	31	No Opinion
					15	Missing
	CONSHMON	1.55	.799	My office should monitor GDOT consultants more closely		
				3	19	Strongly Agree
				2	74	Somewhat Agree
				1	70	Somewhat Disagree
				0	15	Strongly Disagree
				9	38	No Opinion
					15	Missing

	CONGRPVN	1.79	.830	When a consultant performs poorly for my office, other GDOT offices hear about it		
				3	33	Strongly Agree
				2	91	Somewhat Agree
				1	43	Somewhat Disagree
				0	15	Strongly Disagree
				9	34	No Opinion
					15	Missing
	CONNOHR1	1.86	.817	If a consultant performs poorly for my office, chances are they won't be hired again by my office		
				3	42	Strongly Agree
				2	96	Somewhat Agree
				1	41	Somewhat Disagree
				0	13	Strongly Disagree
				9	24	No Opinion
					15	Missing
	CONNOHR2	1.16	.810	If a consultant performs poorly for my office, chances are they won't be hired again by any GDOT office		
				3	9	Strongly Agree
				2	39	Somewhat Agree
				1	82	Somewhat Disagree
				0	33	Strongly Disagree
				9	53	No Opinion
					15	Missing
	CONCREEP	1.48	.880	Projects suffer from an unnecessary expansion of the scope of work		
				3	21	Strongly Agree
				2	55	Somewhat Agree
				1	64	Somewhat Disagree
				0	21	Strongly Disagree
				9	54	No Opinion
					16	Missing
Q21	**In your experience, how qualified are GDOT consultants that you are working with in the following areas?**					
	QUATECH	2.15	.470	Technical Expertise		
				3	40	Highly Qualified
				2	163	Qualified
				1	7	Unqualified
				0	1	Highly Unqualified
				9	5	No Opinion
					15	Missing

	QUAPM	1.99	.543	Project Management		
				3	24	Highly Qualified
				2	155	Qualified
				1	19	Unqualified
				0	5	Highly Unqualified
				9	13	No Opinion
					15	Missing
	QUAPROF	2.20	.479	Professionalism		
				3	48	Highly Qualified
				2	158	Qualified
				1	4	Unqualified
				0	2	Highly Unqualified
				9	4	No Opinion
					15	Missing
	QUAINTER	2.07	.475	Interpersonal skills		
				3	27	Highly Qualified
				2	167	Qualified
				1	10	Unqualified
				0	2	Highly Unqualified
				9	9	No Opinion
					16	Missing
	QUAPROC	1.79	.575	Knowledge of GDOT procedures		
				3	14	Highly Qualified
				2	132	Qualified
				1	55	Unqualified
				0	2	Highly Unqualified
				9	13	No Opinion
					15	Missing
	QUAPRES	2.05	.568	Presentation skills		
				3	33	Highly Qualified
				2	142	Qualified
				1	21	Unqualified
				0	2	Highly Unqualified
				9	18	No Opinion
					15	Missing
	QUAPSOLV	2.01	.490	Problem-solving skills		
				3	25	Highly Qualified
				2	162	Qualified
				1	23	Unqualified
				0	1	Highly Unqualified
				9	5	No Opinion
					15	Missing

	QUACOMM	2.08	.452	Communication skills		
				3	28	Highly Qualified
				2	170	Qualified
				1	11	Unqualified
				0	1	Highly Unqualified
				9	6	No Opinion
					15	Missing
VI. How Consultants Affect GDOT Employees						
Q22	**This question presents opposite Impacts that consultants may have on GDOT employees. Please circle the number between the opposites that reflects the impact that consultants have had on <u>you</u> as a GDOT employee.**					
	MEWORK	3.12	.889	1	6	Lighter workload
				2	45	Somewhat lighter workload
				3	97	Doesn't change workload
				4	56	Somewhat heavier workload
				5	11	Heavier workload
					16	Missing
	MEMORAL	3.25	.807	1	3	Higher morale
				2	21	Somewhat higher morale
				3	125	Doesn't change morale
				4	48	Somewhat lower morale
				5	18	Lower morale
					16	Missing
	MEMOTIV	3.05	.739	1	2	Higher motivation
				2	36	Somewhat higher motivation
				3	134	Doesn't change motivation
				4	33	Somewhat lower motivation
				5	10	Lower motivation
					16	Missing
	MEPRODUC	.282	.822	1	6	Higher productivity
				2	69	Somewhat higher productivity
				3	102	Doesn't change productivity
				4	32	Somewhat lower productivity
				5	6	Lower productivity
					16	Missing
	MEJOBSAT	3.10	.819	1	5	Higher job satisfaction
				2	34	Somewhat higher job satisfaction
				3	121	Doesn't change job satisfaction
				4	41	Somewhat lower job satisfaction
				5	14	Lower job satisfaction
					16	Missing

	MEJOBSEC	3.26	.785	1	3	Higher job security
				2	18	Somewhat higher job security
				3	129	Doesn't change job security
				4	48	Somewhat lower job security
				5	17	Lower job security
					16	Missing
	MEJOBSUC	2.88	.777	1	7	Higher job success
				2	50	Somewhat higher job success
				3	123	Doesn't change job success
				4	27	Somewhat lower job success
				5	7	Lower job success
					17	Missing
Q23	**To what extent do you agree or disagree with the following statements about the impact of consultant management on GDOT employee career path?**					
	CARPROMO	1.10	.856	GDOT employees who manage consultants are promoted more quickly than GDOT employees who do not manage consultant		
				3	7	Strongly Agree
				2	34	Somewhat Agree
				1	58	Somewhat Disagree
				0	37	Strongly Disagree
				9	81	No opinion
					14	Missing
	CAREXNEC	1.30	.893	Experience in managing consultants is necessary for career advancement at GDOT		
				3	15	Strongly Agree
				2	55	Somewhat Agree
				1	65	Somewhat Disagree
				0	34	Strongly Disagree
				9	48	No opinion
					14	Missing
	CAREXGD	2.38	.602	Consultant management experience is a good skill to have		
				3	88	Strongly Agree
				2	106	Somewhat Agree
				1	6	Somewhat Disagree
				0	2	Strongly Disagree
				9	15	No opinion
					14	Missing

	CARMARKT	2.08	.784	Consultant management experience enhances my attractiveness to other employers		
				3	50	Strongly Agree
				2	87	Somewhat Agree
				1	23	Somewhat Disagree
				0	7	Strongly Disagree
				9	49	No opinion
					15	Missing
VII. How Consultants Affect GDOT as a State Agency						
Q24	**How much do you agree or disagree with the following statements about consultant usage at GDOT?**					
	TRNNEC	2.00	.891	Consultants are necessary to accomplish GDOT's mission		
				3	62	Strongly Agree
				2	102	Somewhat Agree
				1	28	Somewhat Disagree
				0	17	Strongly Disagree
				9	9	No Opinion
					13	Missing
	TRNGOOD	1.88	.866	The use of consultants is good for GDOT		
				3	47	Strongly Agree
				2	104	Somewhat Agree
				1	37	Somewhat Disagree
				0	18	Strongly Disagree
				9	12	No Opinion
					13	Missing
	TRNNEED	1.03	.894	The need for consultants within GDOT will decline over the next ten years		
				3	10	Strongly Agree
				2	44	Somewhat Agree
				1	70	Somewhat Disagree
				0	60	Strongly Disagree
				9	34	No Opinion
					13	Missing
	TRNEXPRT	2.18	.708	GDOT should develop greater expertise in managing consultants		
				3	65	Strongly Agree
				2	114	Somewhat Agree
				1	18	Somewhat Disagree
				0	6	Strongly Disagree
				9	15	No Opinion
					13	Missing
	TRNMANG	.45	.703	GDOT should become an agency primarily responsible for managing consultants and contractors		

				3	2	Strongly Agree
				2	18	Somewhat Agree
				1	49	Somewhat Disagree
				0	135	Strongly Disagree
				9	14	No Opinion
					13	Missing
Q25	**This question presents opposite versions of impacts that consultants may have on GDOT as a state agency. Please circle a number between the opposites that reflects the nature of the impact that consultants have had on GDOT as a state agency.**					
	GDTCOST	3.92	.877	1	2	Lower costs
				2	6	Somewhat lower costs
				3	65	Doesn't change costs
				4	81	Somewhat higher costs
				5	62	Higher costs
					15	Missing
	GDTSERVE	2.90	.839	1	5	Enhanced service
				2	65	Somewhat enhanced service
				3	92	Doesn't change service
				4	48	Somewhat reduced service
				5	4	Reduced service
					17	Missing
	GDTSKILL	2.94	.968	1	6	Added skills
				2	71	Somewhat added skills
				3	79	Doesn't change skills
				4	44	Somewhat lost skills
				5	15	Lost skills
					16	Missing
	GDTFLEX	2.81	.778	1	8	Administrative flexibility
				2	63	Somewhat administrative flexibility
				3	110	Doesn't change administrative flexibility
				4	33	Somewhat administrative inflexibility
				5	2	Administrative inflexibility
					15	Missing

	GDTEFF	2.75	.781	1	4	Agency effectiveness
				2	82	Somewhat agency effectiveness
				3	93	Doesn't change agency effectiveness
				4	32	Somewhat agency ineffectiveness
				5	4	Agency ineffectiveness
					16	Missing
	GDTREP	3.08	.658	1	2	Improved agency reputation
				2	25	Somewhat improved agency reputation
				3	143	Doesn't change agency reputation
				4	37	Somewhat damaged agency reputation
				5	6	Damaged agency reputation
					18	Missing
	GDTSTAFF	3.19	.921	1	3	Effective use of in-house staff
				2	45	Somewhat effective use of in-house staff
				3	93	Doesn't change the use of in-house staff
				4	54	Somewhat ineffective use of in-house staff
				5	20	Ineffective use of in-house staff
					16	Missing
	GDTCORE	3.39	.870	1	2	Stronger in-house core competencies
				2	24	Somewhat stronger in-house core competencies
				3	104	Doesn't change in-house core competencies
				4	60	Somewhat weaker in-house core competencies
				5	25	Weaker in-house core competencies
					16	Missing
	GDTMTSTF	3.37	.834	1	4	Motivated staff
				2	17	Somewhat motivated staff
				3	110	Doesn't change the motivation of staff
				4	63	Somewhat unmotivated staff
				5	21	Unmotivated staff
					16	Missing
	GDTEPERF	3.27	.805	1	3	Increased employee performance
				2	24	Somewhat increased employee performance
				3	114	Doesn't change employee performance
				4	58	Somewhat decreased employee performance
				5	16	Decreased employee performance
					16	Missing
	GDTMRSTF	3.45	1.017	1	6	More staff
				2	33	Somewhat more staff
				3	71	Doesn't change the number of staff
				4	69	Somewhat less staff
				5	36	Less staff
					16	Missing

	GDTMMGMT	3.05	.691	1	2	Motivated management
				2	33	Somewhat motivated management
				3	134	Doesn't change management
				4	37	Somewhat unmotivated management
				5	7	Unmotivated management
					18	Missing
	GDTACCNT	3.28	.811	1	3	Accountability gained
				2	25	Somewhat accountability gained
				3	114	Doesn't change accountability
				4	56	Somewhat accountability lost
				5	16	Accountability lost
					17	Missing
	GDTQUAL	3.28	.908	1	5	Higher quality work
				2	29	Somewhat higher quality work
				3	101	Doesn't change work quality
				4	58	Somewhat lower quality work
				5	21	Lower quality work
					17	
Q26	**To what extent do you agree or disagree with the following endings to the statement "GDOT would be better off if …"**					
	BETNOCON	1.47	.930	All the work was performed in-house without hiring any consultants		
				3	31	Strongly Agree
				2	62	Somewhat Agree
				1	79	Somewhat Disagree
				0	30	Strongly Disagree
				9	15	No Opinion
					14	Missing
	BETMRCON	.95	.755	More consultants were hired to assist GDOT		
				3	3	Strongly Agree
				2	41	Somewhat Agree
				1	95	Somewhat Disagree
				0	57	Strongly Disagree
				9	19	No Opinion
					16	Missing
	BETPOOL	1.89	.806	Pool of available consultants were more competent to do GDOT work		
				3	41	Strongly Agree
				2	98	Somewhat Agree
				1	36	Somewhat Disagree
				0	11	Strongly Disagree
				9	28	No Opinion
					17	Missing

	BETMSKIL	1.84	.720	GDOT staff were more skillful in utilizing consultants		
				3	27	Strongly Agree
				2	119	Somewhat Agree
				1	35	Somewhat Disagree
				0	11	Strongly Disagree
				9	23	No Opinion
					16	Missing
	BETPRTNR	2.13	.681	GDOT staff and consultants work more as partners to achieve GDOT goals		
				3	55	Strongly Agree
				2	112	Somewhat Agree
				1	20	Somewhat Disagree
				0	5	Strongly Disagree
				9	23	No Opinion
					16	Missing
VIII. General Information *This section seeks general information on you as a GDOT employee*						
Q27	**Please rate your level of agreement with the following statements:**					
	PSMMEAN	2.71	.523	Meaningful public service is very important to me		
				3	163	Strongly Agree
				2	57	Somewhat Agree
				1	4	Somewhat Disagree
				0	1	Strongly Disagree
				9	3	No Opinion
					3	Missing
	PSMSELF	2.16	.712	I would prefer seeing public officials do what is best for the whole community even if it harmed my interests		
				3	62	Strongly Agree
				2	112	Somewhat Agree
				1	21	Somewhat Disagree
				0	7	Strongly Disagree
				9	24	No Opinion
					5	Missing
	PSMPROF	2.09	.717	I identify myself as a professional more so than a public servant		
				3	62	Strongly Agree
				2	109	Somewhat Agree
				1	35	Somewhat Disagree
				0	3	Strongly Disagree
				9	19	No Opinion
					3	Missing

	PSMREP	2.34	.663	Professional reputation is more important to me than rank		
				3	96	Strongly Agree
				2	103	Somewhat Agree
				1	16	Somewhat Disagree
				0	2	Strongly Disagree
				9	11	No Opinion
					3	Missing
	PSMTECH	1.60	.828	My work should be primarily technical rather than managing consultants		
				3	27	Strongly Agree
				2	77	Somewhat Agree
				1	74	Somewhat Disagree
				0	15	Strongly Disagree
				9	35	No Opinion
					3	Missing
Q28	**Approximately how long have you worked for GDOT?**					
	TENURE	15.73	8.869	num		Years
					2	Missing
Q29	**Have you ever worked in the private sector on transportation-related issues?**					
	PRIVATE	.21	.408	1	48	Yes
				0	181	No
					2	Missing
Q29a	**If yes, how many years did you work in the private sector?**					
	PRIVYRS	5.57	7.921	num		Years in the private sector
					2	Missing
Q30	**Please indicate your highest level of education:**					
	EDUCATE	3.68	1.045	0		GED
				1	14	High school diploma
				2	22	Some college education
				3	21	Associates degree
				4	136	Undergraduate degree
				5	35	Graduate degree
					3	Missing

Q31	**Which of the following categories best describes your age:**					
	AGE	2.06	.998	0	21	Under 30
				1	35	30-35
				2	96	36-45
				3	64	46-55
				4	12	Over 55
					3	Missing
Q32	**What is your gender?**					
	GENDER	.85	.359	0	34	Female
				1	188	Male
					9	Missing

REFERENCES

Achen, Christopher H. 1991. *A Polychotomous Linear Probability Model*. Berkeley, CA: Political Methodology Society.

Aguinis, Herman. 2002. "Estimation of interaction effects in organization studies." *Organizational Research Methods* 5 (3):207-11.

Aiken, Leona S., and Stephen G. West. 1991. *Multiple Regression: Testing and Interpreting Interactions*. Thousand Oaks, CA: Sage Publications.

Alavi, H.R., and M.R. Askaripur. 2003. "The relationship between self-esteem and job satisfaction of personnel in government organizations." *Public Personnel Management* 32 (4):591-600.

Albrecht, S., and A. Travaglione. 2003. "Trust in public-sector senior management." *International Journal of Human Resource Management* 14 (1):76-92.

Albrecht, Simon L. 2002. "Perceptions of integrity, competence and trust in senior management as determinants of cynicism toward change." *Public Administration and Management: An Interactive Journal* 7 (4):320-43.

Allen, Joan W., Keon S. Chi, Kevin M. Devlin, Mark Fall, Harry P. Hatry, and Wayne Masterman. 1989. *The Private Sector in State Service Delivery: Examples of Innovative Practices*. Washington, DC: The Urban Institute.

Allen, N.J., and J.P. Meyer. 1990. "The measurement and antecedents of affective, continuance and normative commitment to the organization." *Journal of Occupational Psychology* 63:1-18.

Allen, S., and A. Chandrashkar. 2000. "Outsourcing service: The contract is just the beginning." *Business Horizons* 43 (2):25-34.

Allison, Paul. 1999. *Multiple Regression: A Primer*. Thousand Oaks, CA: Pine Forge.

American Federal of State County and Municipal Employees. 1983. *Passing the Buck: The Contracting Out of Public Services*. Washington, DC: American Federal of State County and Municipal Employees.

Amiot, C. E., D. J. Terry, N. L. Jimmieson, and V. J. Callan. 2006. "A longitudinal investigation of coping processes during a merger: Implications for job satisfaction and organizational identification." *Journal of Management* 32 (4):552-74.

Anderson, G. 1996. "The new focus on the policy capacity of the Federal government." *Canadian Public Administration* 39 (4):469-88.

Andersson, L. M., and T. S. Bateman. 1997. "Cynicism in the workplace: some causes and effects." *Journal of Organizational Behavior* 18 (5):449-69.

Andrew, I. E. Ewoh. 1999. "An inquiry into the role of public employees and managers in privatization." *Review of Public Personnel Administration* 19 (1):8.

Applebaum, E., and R. Batt. 1993. *The New American Workplace*. Ithaca, NY: Cornell University Press.

Armenakis, A.A., and A.G. Bedeian. 1999. "Organizational change: A review of theory and research in the 1990s." *Journal of Management* 25 (3):293-315.

Armenakis, A.A., and S.G. Harris. 2002. "Crafting a change message to create transformational readiness." *Journal of Organizational Change Management* 15 (2):169-83.

Armenakis, A.A., S.G. Harris, and K.W. Mossholder. 1993. "Creating readiness for organizational change." *Human Relations* 46 (6):681-703.

Armstrong-Stassen, M. 2001. "Reactions of older employees to organizational downsizing: The role of gender, job level, and time." *Journals of Gerontology Series B-Psychological Sciences and Social Sciences* 56 (4):P234-P43.

Ashford, S. J., C. Lee, and P. Bobko. 1989. "Content, causes, and consequences of job insecurity - A theory-based measure and substantive test." *Academy of Management Journal* 32 (4):803-29.

Ashford, S.J. 1988. "Individual strategies for coping with stress during organizational transitions." *Journal of Applied Behavioral Science* 24 (1):19-36.

Avery, G. 2000. "Outsourcing public health laboratory services: A blueprint for determining whether to privatize and how." *Public Administration Review* 60 (4):330-7.

Axtell, C. M., and S. K. Parker. 2003. "Promoting role breadth self-efficacy through involvement, work redesign and training." *Human Relations* 56 (1):113-31.

Axtell, C., T. Wall, C. Stride, K. Pepper, C. Clegg, P. Gardner, and R. Bolden. 2002. "Familiarity breeds content: The impact of exposure to change on employee openness and well-being." *Journal of Occupational and Organizational Psychology* 75:217-31.

Backer, T.E. 1995. "Assessing and enhancing readiness for change: Implications for technology transfer." In *Reviewing the Behavioral Science Knowledge Base on Technology Transfer*, ed. T. E. Backer, S. L. David and G. Soucy. Rockville, MD: National Institute on Drug Abuse.

Baer, William C. 1986. "Expertise and professional standards." *Work and Occupations* 13 (4):532-52.

Ballard, Michael, and M. E. Warner. 2000. "Taking the high road: Local government restructuring and the quest for quality." In *Power Tools for Fighting Privatization*. Washington, DC: American Federation of State, County and Municipal Employees.

Bandura, A. 1977. "Self-efficacy - Toward a unifying theory of behavioral change." *Psychological Review* 84 (2):191-215.

———. 1986. "The explanatory and predictive scope of self-efficacy theory." *Journal of Social and Clinical Psychology* 4 (3):359-73.

Bardach, Eugene. 1977. *The Implementation Game: What Happens after a Bill Becomes a Law*. Cambridge, MA: MIT Press.

Barrett, J. H., R. A. Haslam, K. G. Lee, and M. J. Ellis. 2005. "Assessing attitudes and beliefs using the stage of change paradigm - case study of health and safety appraisal within a manufacturing company." *International Journal of Industrial Ergonomics* 35 (10):871-87.

Barrett, Katherine, and Richard Greene. 2005. "Grading the States: A management report card." *Governing*, February, 24-95.

Barringer, Bruce R., and Foard F. Jones. 2004. "Achieving rapid growth: Revisiting the managerial capacity problem." *Journal of Developmental Entrepreneurship* 9 (1):73-86.

Baty, Gordon B., William M. Evan, and Terry W. Rothermel. 1971. "Personnel flows as interorganizational relations." *Administrative Science Quarterly* 16:430-43.

Bazerman, M. H. 1986. *Judgment in Managerial Decision Making*. New York, NY: John Wiley & Sons.

Beck, K., and C. Wilson. 2000. "Development of affective organizational commitment: A cross-sequential examination of change with tenure." *Journal of Vocational Behavior* 56 (1):114-36.

Begley, T.M., and J.M. Czajka. 1993. "Panel analysis of the moderating effects of commitment on job satisfaction, intent to quit, and health following organizational change." *Journal of Applied Psychology* 78 (4):552-6.

Belker, Loren B. 1997. *The First-Time Manager*. 4th ed. New York: American Management Association.

Bennett, James T., and Manuel H. Johnson. 1981. *Better Government at Half the Price*. Ottawa, IL: Carolina House.

Bennett, S., and A. Mills. 1998. "Government capacity to contract: Health sector experience lessons." *Public Administration and Development* 18 (4):307-26.

Berggren, Christian, Jonas Soderlund, and Christian Anderson. 2000. "Clients, contractors, and consultants: The consequences of organizational fragmentation in contemporary project environments." *Project Management Journal* 32:39.

Bernstein, S. R. 1991. *Managing Contracted Services in the Nonprofit Agency: Administrative, Ethical, and Political Issues*. Philadelphia, PA: Temple University Press.

Berry, William D. 1993. *Understanding Regression Assumptions*. Thousand Oaks, CA: Sage Publications.

Beugelsdijk, S., A. Slangen, and M. van Herpen. 2002. "Shapes of organizational change: the case of Heineken Inc." *Journal of Organizational Change Management* 15 (3):311-26.

Blanchard, K. A., J. Morgenstern, T. J. Morgan, E. Labouvie, and D. A. Bux. 2003. "Motivational subtypes and continuous measures of readiness for change: Concurrent and predictive validity." *Psychology of Addictive Behaviors* 17 (1):56-65.

Bloom, P.J., and M. Sheerer. 1992. "Changing organizations by changing individuals: A model of leadership training." *Urban Review* 24:263-86.

Bommer, W.H., G.A. Rich, and R.S. Rubin. 2005. "Changing attitudes about change: Longitudinal effects of transformational leader behavior on employee cynicism about organizational change." *Journal of Organizational Behavior* 26 (7):733-53.

Bommer, W.H., R.S. Rubin, and T.T. Baldwin. 2004. "Setting the stage for effective leadership: Antecedents of transformational behavior." *Leadership Quarterly* 15 (2):195-210.

Bordia, P., E. Hobman, E. Jones, C. Gallois, and V. J. Callan. 2004. "Uncertainty during organizational change: Types, consequences, and management strategies." *Journal of Business and Psychology* 18 (4):507-32.

Bowen, Don L., and Merrill J. Collett. 1978. "When and how they use a consultant: Guidelines for public managers." *Public Administration Review* 38 (5):476-82.

Bowling, C. J., and D. S. Wright. 1998. "Change and continuity in state administration: Administrative leadership across four decades." *Public Administration Review* 58 (5):429-44.

Boyne, G.A. 1998. "Bureaucratic theory meets reality: Public choice and service contracting in U.S. local government." *Public Administration Review* 58 (6):474-84.

Brandes, Pamela, Ravi Dharwadkar, and James W. Dean Jr. 1999. "Does organizational cynicism matter?: Employee and supervisor perspectives on work outcomes." In *The 36th Annual Meeting of the Eastern Academy of Management*. Philadelphia, PA.

Brewer, G. A. 2005. "In the eye of the storm: Frontline supervisors and federal agency performance." *Journal of Public Administration Research and Theory* 15 (4):505-27.

Brewer, G. A., S. C. Selden, and R. L. Facer. 2000. "Individual conceptions of public service motivation." *Public Administration Review* 60 (3):254-64.

Brower, R. S., and M. Y. Abolafia. 1995. "The structured embeddedness of resistance among public managers." *Group and Organization Management* 20:149-66.

Brown, June Gibbs, and George Grob. 2003. "The 25-year bureaucrat." *International Journal of Public Administration* 26 (10-11):1089.

Brown, Mary Maureen, and Jeffrey L. Brudney. 1998. "A 'smarter, better, faster, and cheaper' government: Contracting and Geographic Information Systems." *Public Administration Review* 58 (4):335-45.

Brown, Trevor L., and Matthew Potoski. 2003. "Contract-management capacity in municipal and county governments." *Public Administration Review* 63 (2):153-64.

———. 2004. "Managing the public service market." *Public Administration Review* 64 (6):656-68.

———. 2006. "Contracting for management: Assessing management capacity under alternative service delivery arrangements." *Journal of Policy Analysis and Management* 25 (2):323-46.

Brudney, J.L., S. Fernandez, J.E. Ryu, and D.S. Wright. 2005. "Exploring and explaining contracting out: Patterns among the American States." *Journal of Public Administration Research and Theory* 15 (3):393-419.

Bruhn, John G., Gary Zajac, and Ali A. Al-Kazemi. 2001. "Ethical perspectives on employee participation in planned organizational change: A survey of two state public welfare agencies." *Public Performance & Management Review* 25 (2):208.

Buchanan, James M., and G. Tullock. 1965. *The Calculus of Consent: Logical Foundations of Constitutional Democracy*. Ann Arbor, MI: The University of Michigan Press.

Burke, W.W., and G.H. Litwin. 1992. "A causal model of organizational performance and change." *Journal of Management* 18 (3):525-45.

Burr, R., and J. L. Cordery. 2001. "Self-management efficacy as a mediator of the relation between job design and employee motivation." *Human Performance* 14 (1):27-44.

Callan, V.J. 1993. "Individual and organizational strategies for coping with organizational change." *Work and Stress* 7 (1):63-75.

Chalmers, J., and G. Davis. 2001. "Rediscovering implementation: Public sector contracting and human services." *Australian Journal of Public Administration* 60 (2):74-85.

Chandler, Timothy, and Peter Feuille. 1991. "Municipal unions and privatization." *Public Administration Review* 51 (1):15-22.

Chawla, Anuradha, and E. Kevin Kelloway. 2004. "Predicting openness and commitment to change." *Leadership & Organization Development Journal* 25 (5/6):485.

Chen, G. L., T. G. Goddard, and W. J. Casper. 2004. "Examination of the relationships among general and work-specific self-evaluations, work-related control beliefs, and job attitudes." *Applied Psychology-an International Review-Psychologie Appliquee-Revue Internationale* 53 (3):349-70.

Chi, Keon S., and Cindy Jasper. 1998. *Private Practices: A Review of Privatization in State Government*. Lexington, KY: Council of State Governments.

Choi, Youseok, and Carolyn J. Heinrich. 2004. "Privatization and performance-based contracting in public welfare programs." In *Paper presented at the Association for Policy Analysis and Management Fall Research Conference*. Atlanta, GA.

Chun, Young Han, and H. G. Rainey. 2005. "Goal ambiguity and organizational performance in U.S. federal agencies." *Journal of Public Administration Research and Theory* 15:529-57.

Cibinic Jr, J., and R. C. Nash. 1995. *Administration of Government Contracts*. 3rd. ed. Washington, DC: George Washington University Press.

Clark, Timothy. 1995. *Managing Consultants: Consultancy as the Management of Impressions*. Buckingham: Open University Press.

Coggburn, Jerrell D., and Saundra K. Schneider. 2003. "The quality of management and government performance: An empirical analysis of the American states." *Public Administration Review* 63 (2):206-14.

Cohen, W. S. 1983. "The Competition in Contracting Act." *Public Contract Law Journal* 14 (1):2-39.

Cohen, J., and P. Cohen. 1983. *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. Hillsdale, NJ: Erlbaum.

Connor, D.R., and R.W. Patterson. 1982. "Building commitment to organizational change." *Training and Development Journal* 36:18-30.

Cook, T.D., and D.T. Campbell. 1979. *Quasi-experimentation: Design & Analysis Issues for Field Settings*. Boston, MA: Houghton Mifflin.

Cooper, Phillip J. 1980. "Government contracts in public administration: The role and environment of the contracting officer." *Public Administration Review* 40 (5):459.

———. 2003. *Governing by Contract: Challenges and Opportunities for Public Managers*. Washington, DC: Congressional Quarterly Press.

Cotton, J.L. 1993. *Employee Involvement: Methods for Improving Performance and Work Attitudes*. London: Sage.

Cotton, J.L., D.A. Vollrath, K.L. Froggatt, M.L. Lengnick-Hall, and K.R. Jennings. 1988. "Employee participation: Diverse forms and different outcomes." *Academy of Management Review* 13 (1):8-22.

Covin, T. J., and R. H. Kilmann. 1990. "Participant perceptions of positive and negative influences on large-scale change." *Group & Organization Studies* 15 (2):233-48.

Cramptom, S.M., and J.A. Wagner. 1994. "Percept-percept inflation in micro-organizational research: An investigation of prevalence and effect." *Journal of Applied Psychology* 79:67-76.

Crawford, J. W., and S. L. Krahn. 1998. "The demanding customer and the hollow organization: Meeting today's contract management challenge." *Public Performance & Management Review* 22:107-18.

Crewson, Philip E., and Bonnie S. Fisher. 1997. "Getting older and wiser: The changing skill requirements of city administrators." *Public Administration Review* 57 (5):380-7.

Cronbach, L.J. 1951. "Coefficient alpha and the internal structure of tests." *Psychometrika* 16:297-334.

Cunningham, C.E., C.A. Woodward, H.S. Shannon, J. MacIntosh, B. Lendrum, D. Rosenbloom, and J. Brown. 2002. "Readiness for organizational change: A longitudinal study of workplace, psychological, and behavioural correlates." *Journal of Occupational and Organizational Psychology* 75 (4):377-92.

Dalton, C. C., and L. N. Gottlieb. 2003. "The concept of readiness to change." *Journal of Advanced Nursing* 42 (2):108-17.

Danhof, Clarence H. 1968. *Government Contracting and Technological Change*. Washington, DC: The Brookings Institution.

Davis, G., and T. Wood. 1998. "Is there a future for contracting in the Australian public sector?" *Australian Journal of Public Administration* 57 (4):85-97.

Day, R., and T. D. Allen. 2004. "The relationship between career motivation and self-efficacy with protégé career success." *Journal of Vocational Behavior* 64 (1):72-91.

De Zanet, F., I. Hansez, M. Bossut, C. Vandenberghe, and V. De Keyser. 2004. "Analysis of the discourse of workers confronted with organizational changes: A transactional perspective." *Travail Humain* 67 (3):257-81.

Dean, J.W., P. Brandes, and R. Dharwadkar. 1998. "Organizational cynicism." *Academy of Management Review* 23 (2):341-52.

DeHoog, Ruth Hoogland. 1984. *Contracting Out for Human Services: Economic, Political, and Organizational Perspectives*. Albany, NY: State University of New York Press.

———. 1985. "Human services contracting: Environmental, behavioral, and organizational conditions." *Administration and Society* 16 (4):427-54.

———. 1990. "Competition, negotiation, or cooperation: Three models for service contracting." *Administration and Society* 22 (3):317-40.

deLeon, Linda, and Robert A. Denhardt. 2000. "The political theory of reinvention." *Public Administration Review* 60 (2):89-97.

Devos. 2003. "Openness to organizational change: The contribution of content, context, and process." In *Vlerick Leuven Gent Working Paper Series 2003/06*: Vlerick Leuven Gent Management School.

Devos, Geert, Karlien Vanderheyden, and Herman van der Broeck. 2002. "A framework for assessing commitment to change: Process and context variables of organizational change." In *Vlerick Working Papers 2002/11*: Vlerick Leuven Gent Management School.

Dilger, Robert Jay, Randolph Moffett, and Linda Struyk. 1997. "Privatization of municipal services in America's largest cities." *Public Administration Review* 57 (1):21-6.

Domberger, S. 1998. *The Contracting Organization: A Strategic Guide to Outsourcing*. Melbourne, Australia: Oxford University Press.

Domberger, S., and P. Jensen. 1997. "Contracting out by the public sector: Theory, evidence, prospects." *Oxford Review of Economic Policy* 13 (4):67-78.

Donahue, Amy Kneedler, Sally Coleman Seldon, and Patricia W. Ingraham. 2000. "Measuring government management capacity: A comparative analysis of city human resources management systems." *Journal of Public Administration Research and Theory* 10 (2):381-412.

Donahue, John D. 1989. *The Privatization Decision: Public Ends, Private Means*. New York: Basic Books.

Driscoll, J.W. 1978. "Trust and participation in organizational decision making as predictors of satisfaction." *Academy of Management Journal* 21:44-56.

Dudley, Larkin Sims. 1990. *Contractual Governance: Theory and Practice in Circular A-76*. Blacksburg, VA.

Dunphy, D.C., and D.A. Stace. 1990. *Under New Management: Australian Organisations in Transition*. Sydney: McGraw-Hill.

Easton, Allan. 1973. *Complex Managerial Decisions Involving Multiple Objectives*. New York: Wiley.

Easton, David. 1965. *A Framework for Political Analysis*. Englewood Cliffs, NJ: Prentice Hall.

Eby, L. T., D. M. Adams, J. E. A. Russell, and S. H. Gaby. 2000. "Perceptions of organizational readiness for change: Factors related to employees' reactions to the implementation of team-based selling." *Human Relations* 53 (3):419-42.

Edmondson, A.C., and A.W. Woolley. 1999. It's not the seed, it's the soil: Social psychological influences on outcomes of organizational change programs. Paper read at Annual Meeting of the Academy of Management.

Eisenberger, R., R. Huntington, S. Hutchison, and D. Sowa. 1986. "Perceived Organizational Support." *Journal of Applied Psychology* 71 (3):500-7.

Elrod III, P. David, and Donald D. Tippett. 2002. "The "death valley" of change." *Journal of Organizational Change Management* 15 (3):273-91.

Executive Office of the President, Office of Management and Budget. 1992. "Interagency Task Force Report of the Federal Contract Audit Process." Washington, DC: OMB.

Ezra, Marni, and Melissa Deckman. 1996. "Balancing work and family responsibilities: Flextime and child care in federal government." *Public Administration Review* 56 (2):174-9.

Fedor, D. B., S. Caldwell, and D. M. Herold. 2006. "The effects of organizational changes on employee commitment: A multilevel investigation." *Personnel Psychology* 59 (1):1-29.

Fernandez, S., and H. G. Rainey. 2006. "Managing successful organizational change in the public sector." *Public Administration Review* 66 (2):168-76.

Ferris, James M., and Elizabeth Graddy. 1986. "Contracting out: For what? With whom?" *Public Administration Review* 46 (4):332-44.

———. 1988. "The production choices for local government services." *Journal of Urban Affairs* 10:273-89.

Finley, L. K. 1989. "Alternative service delivery. Privatization and competition." In *Public Sector Privatization: Alternative approaches to service delivery*, ed. L. K. Finley. New York: Quorom Books.

Finney, J.W., R.E. Mitchell, R.C. Cronkite, and R.H. Moos. 1984. "Methodological issues in estimating main and interaction effects: Examples from coping/social support and stress field." *Journal of Health and Social Behavior* 25:85-98.

Fisk, Donald, Herbert Kiesling, and Thomas Muller. 1978. *Private Provision of Public Services: An Overview*. Washington, DC: Urban Institute.

Florestano, Patricia S., and Stephen B. Gordon. 1980. "Public vs. private: Small government contracting with the private sector." *Public Administration Review* 40 (1):28-35.

Folkman, S. 1984. "Personal control and stress and coping processes - A theoretical-analysis." *Journal of Personality and Social Psychology* 46 (4):839-52.

Ford, J. D., Laurie W. Ford, and Randall T. McNamara. 2002. "Resistance and the background conversations of change " *Journal of Organizational Change Management* 15 (2):105-21.

Forsberg, L., S. Ekman, J. Halldin, and S. Ronnberg. 2004. "The Readiness to Change Questionnaire: Reliability and validity of a Swedish version and a comparison of scoring methods." *British Journal Of Health Psychology* 9:335-46.

Fox, D. G., R. L. Ellison, and K. L. Keith. 1988. "Human-resource management - An index and its relationship to readiness for change." *Public Personnel Management* 17 (3):297-302.

Fox, S., and Y. Amichai-Hamburger. 2001. "The power of emotional appeals in promoting organizational change programs." *Academy of Management Executive* 15 (4):84-94.

Friedrich, Robert J. 1982. "In defense of multiplicative terms in multiple regression equations." *American Journal of Political Science* 26 (4):797-833.

Fry, L.W., and S. Greenfield. 1980. "An examination of attitudinal differences between policewomen and policemen." *Journal of Applied Psychology* 65:123-6.

Gargan, John. 1981. "Consideration of local government capacity." *Public Administration Review* 41 (6):649-58.

George, J. M., and G. R. Jones. 2001. "Towards a process model of individual change in organizations." *Human Relations* 54 (4):419-44.

Georgia Department of Transportation. 2002. *Georgia Department of Transportation Fact Book 2002*. Atlanta, GA: Georgia Department of Transportation.

Gianakos, I. 2001. "Predictors of career decision-making self-efficacy." *Journal of Career Assessment* 9 (2):101-14.

Giangreco, A., and R. Peccei. 2005. "The nature and antecedents of middle manager resistance to change: evidence from an Italian context." *International Journal of Human Resource Management* 16 (10):1812-29.

Gibbons, D. E., and L. R. Weingart. 2001. "Can I do it? Will I try? Personal efficacy, assigned goals, and performance norms as motivators of individual performance." *Journal of Applied Social Psychology* 31 (3):624-48.

Gilmour, R. S., and L. S. Jensen. 1998. "Reinventing government accountability: Public functions, privatization, and the meaning of 'state action'." *Public Administration Review* 58 (3):247-58.

Gist, M.E., and T.R. Mitchell. 1992. "Self-efficacy: A theoretical analysis of its determinants and malleability." *Academy of Management Review* 17 (2):183-211.

Globerman, S., and A. R. Vining. 1996. "A framework for evaluating the government contracting-out decision with an application to information technology." *Public Administration Review* 56 (6):577-86.

Gooden, Vincent. 1998. "Contracting and negotiation: Effective practices of successful human service contract managers." *Public Administration Review* 58 (6):499-509.

Grasso, Valerie Bailey. 2004. "Frequently Asked Questions About Contracting." Washington, DC: Congressional Research Service.

Gray, Barbara. 1989. *Collaborating: Finding Common Ground for Multiparty Problems*. San Francisco, CA: Jossey-Bass.

Greenhalgh, L., and Z. Rosenblatt. 1984. "Job insecurity: Toward conceptual clarity." *Academy of Management Review* 9 (3):438-48.

Guterman, N. B., and D. Bargal. 1996. "Social workers' perceptions of their power and service outcomes." *Administration in Social Work* 20 (3):1-20.

Gutman, Dan. 2000. "Public purpose and private service: The twentieth century culture of contracting out and the evolving law of diffused sovereignty." *Administrative Law Review* 52:859-926.

Halachmi, A., and V. L. Montgomery. 2000. "Best value accountability: Issues and observations." *International Review of Administrative Sciences* 66 (3):387-414.

Handler, Joel F. 1996. *Down from Bureaucracy: The Ambiguity of Privatization and Empowerment*. Princeton: Princeton University Press.

Haque, M. S. 2000. "Significance of accountability under the new approach to public governance." *International Review of Administrative Sciences* 66 (4):599-617.

Harder, Barbara T., Neil J. Pederson, Tom Warne, and Barbara Martin. 2005. "On budget and on time: Using the power of people to get projects done." *TR News*, July-August, 10:5.

Harrow, Jenny. 2001. "Capacity building as a public management goal: Myth, magic, or the main chance?" *Public Management Review* 3 (2):209-31.

Hebdon, Robert. 1995. "Contracting out in New York State: The story the Lauder Report chose not to tell." *Labor Studies Journal* :3-29.

Hefetz, Amir, and M. Warner. 2004. "Privatization and its reverse: Explaining the dynamics of the government contracting process." *Journal of Public Administration Research and Theory* 14 (2):171-90.

Heise, David R. 1970. "The semantic differential and attitude research." In *Attitude Measurement*, ed. G. F. Summers. Chicago: Rand McNally.

Honadle, Beth, Walter Howitt, and Arnold M. Howitt. 1986. *Perspectives on Management Capacity Building*. Albany: State University of New York Press.

Hoogervorst, Jan, Flier Henk van der, and Paul Koopman. 2004. "Implicit communication in organisations: The impact of culture, structure and management practices on employee behaviour." *Journal of Managerial Psychology* 19 (3):288.

Houston, David J. 2000. "Public-service motivation: A multivariate test." *Journal of Public Administration Research and Theory* 10 (4):713-28.

Huy, Quy Nguyen. 1999. "Emotional capability, emotional intelligence, and radical change." *Academy of Management Review* 24 (2):325-46.

Ingraham, Patricia W., and Amy E. Kneedler. 2000. "Dissecting the black box revisited: Characterizing government management capacity." In *Models and Methods for the Empirical Study of Governance*, ed. Laurence E. Lynn Jr. Washington, DC: Georgetown University Press.

Iwi, D., J. Watson, P. Barber, N. Kimber, and G. Sharman. 1998. "The self-reported well-being of employees facing organizational change: effects of an intervention." *Occupational Medicine-Oxford* 48 (6):361-8.

Jaccard, James and Robert Turrisi. 2003. *Interaction Effects in Multiple Regression.* Thousand Oaks, CA: Sage Publications.

Jaccard, James, and Choi K. Wan. 1996. *LISREL Approaches to Interaction Effects in Multiple Regression*. Thousand Oaks, CA: Sage Publications.

Jaffe, D., C. Scott, and G. Tobe. 1994. *Rekindling Commitment: How to Revitalize Yourself, Your Work, and Your Organization*. San Francisco: Jossey-Bass.

Jannis, I.L., and L. Mann. 1977. *Decision Making*. New York: Free Press.

Javidan, M, and D. Waldman. 2003. "Exploring charismatic leadership in the public sector: Measurement and consequences." *Public Administration Review* 63:229-41.

Johnson, J. L., and A. M. O'Leary-Kelly. 2003. "The effects of psychological contract breach and organizational cynicism: not all social exchange violations are created equal." *Journal of Organizational Behavior* 24:627-47.

Johnston, Jocelyn M., and Barbara S. Romzek. 1999. "Contracting and accountability in state Medicaid reform: Rhetoric, theories, and reality." *Public Administration Review* 59 (5):383-99.

Johnston, Van R. 1996. "Optimizing productivity through privatization and entrepreneurial management." *Policy Studies Journal* 24:444-63.

Jones, R. A., N. L. Jimmieson, and A. Griffiths. 2005. "The impact of organizational culture and reshaping capabilities on change implementation success: The mediating role of readiness for change." *Journal of Management Studies* 42 (2):361-86.

Judge, T.A., and J.E. Bono. 2001. "Relationship of core self-evaluations traits: Self-esteem, generalized self-efficacy, locus of control, and emotional stability with job satisfaction and job performance." *Journal of Applied Psychology* 86 (1):80-92.

Judge, T.A., C.J. Thoresen, V. Pucik, and T.M. Welbourne. 1999. "Managerial coping with organizational change: A dispositional perspective." *Journal of Applied Psychology* 84 (1):107-22.

Juenke, E. G. 2005. "Management tenure and network time: How experience affects bureaucratic dynamics." *Journal of Public Administration Research and Theory* 15 (1):113-31.

Kahane, Leo H. 2001. *Regression Basics*. Thousand Oaks, CA: Sage Publications.

Kahn, Robert L., Donald M. Wolfe, Robert P. Quinn, and J. Diedrick Snoek. 1964. *Organizational Stress: Studies in Role Conflict and Ambiguity*. New York: John Wiley and Sons.

Kakabadse, A., and N. Kakabadse. 2001. "Outsourcing in the public services: A comparative analysis of practice, capability and impact." *Public Administration and Development* 21 (5):401-13.

Karpoff, J. M., D. S. Lee, and V. P. Vendrzyk. 1999. "Defense procurement fraud, penalties, and contractor influence." *Journal of Political Economy* 107:809-42.

Katrichis, J. 1992. "The conceptual implications of data centering in interactive regression models." *Journal of Market Research Society* 35:183-192.

Kearns, Kevin. 1994. "The strategic management of accountability in nonprofit organizations: An analytical framework." *Public Administration Review* 54 (2):185-92.

———. 1996. *Managing for Accountability: Preserving the Public Trust in Public and Nonprofit Organizations*. San Francisco, CA: Jossey-Bass.

Keating, E. G. 1999. "Government contracting options: A model and application." *Defence and Peace Economics* 10:191-223.

Kellough, J. Edward and L. Nigro (2006). "Dramatic reform in the public service: At-will employment and the creation of a new public workforce," *Journal of Public Administration Research and Theory*, 16 (3): 447.

Kelman, S. J. 2002. "Contracting." In *The Tools of Government: A Guide to the New Democracy*, ed. L. M. Salamon and O. V. Elliott. Oxford: Oxford University Press.

Kent, James D. 1998. "Elizabeth I and the limits of privatization." *Public Administration Review* 58 (2):99-100.

Kernaghan, K. 2000. "The post-bureaucratic organizations and public service values." *International Review of Administrative Sciences* 66 (1):91-104.

Kets de Vries, Manfred F.R., and Katharina Balazs. 1998. "Beyond the quick fix: The psychodynamics of organizational transformation and change." *European Management Journal* 16 (5):611-22.

Kettl, Donald F. 1988. *Government by Proxy: (Mis?) Managing Federal Programs*. Washington, DC: CQ Press.

———. 1993a. "The myths, realities, and challenges of privatization." In *Revitalizing the State and Local Public Services: A Foundation*, ed. F. Thompson. San Francisco, CA: Jossey-Bass.

———. 1993b. *Sharing Power: Public Governance and Private Markets*. Washington, DC: Brookings Institution.

Kettl, Donald F., William Fanaras, Jennifer Lieb, and Elena Michaels. 2005. *Managing for Performance: A Report on Strategies for Improving the Results of Government*: Brookings Institution Press.

Kim, Soonhee. 2002. "Participative management and job satisfaction: Lessons for management leadership." *Public Administration Review* 62 (2):231-41.

Kleingartner, Archie. 1973. "Collective bargaining between salaried professionals and public sector management." *Public Administration Review* 33 (2):165.

Kotter, John. 1995. *Leading Change*. Cambridge: Harvard Business School Press.

Kramer, Ralph M., and Bart Grossman. 1987. "Contracting for social services: Process management and resource dependencies." *Social Service Review* 61 (1):33-55.

Kreitner, R., and A. Kinicki. 2001. *Organizational Behavior*. Boston: McGraw-Hill.

Landers, Jay. 2003. "Federal Highway Administration allows design/build." *Civil Engineering* 73 (2):10-2.

Landry, R., M. Lamari, and N. Amara. 2003. "Extent and determinants of utilization of university research in government agencies." *Public Administration Review* 63 (2):192-205.

Lau, C.M., and R.W. Woodman. 1995. "Understanding organizational change: A schematic perspective." *Academy of Management Journal* 38 (2):537-54.

Lavery, Kevin. 1999. *Smart Contracting for Local Government Services: Processes and Experiences*. Westport, CT: Praeger.

Leazes, Francis J., Jr. 1997. "Public accountability: Is it a private responsibility?" *Administration and Society* 29 (4):395-411.

Leitzel, Jim. 1992. "Competition in procurement." *Policy Sciences* 25:43-56.

Lewin, K. 1951. *Field Theory in Social Science*. New York: Harper & Row.

Likert, R. 1967. *New Patterns of Management*. New York: McGraw-Hill.

Lindblom, C. 1959. "The science of muddling through." *Public Administration Review* 19:79-88.

Luke, Jeffrey S. 1989. "Public administration education and training in the Third World: Problems and opportunities." *Policy Studies Review* 8 (4):904-13.

Machin, M. A., and S. F. Bannon. 2005. "Australian public sector employees' commitment to organisational change." *Australian Journal of Psychology* 57:226.

Macmanus, S. A. 1992a. "Government contracting and procurement: A critical process for both the public and private sectors." *International Journal of Public Administration* 15:1213-40.

MacManus, Susan A. 1992b. *Doing Business with Government*. New York: Paragon House.

Macrì, Diego Maria, Maria Rita Tagliaventi, and Fabiola Bertolotti. 2002. "A grounded theory for resistance to change in a small organization." *Journal of Organizational Change Management* 15 (3):292-310.

Madsen, Susan R., Duane Miller, and Cameron R. John. 2005. "Readiness for organizational change: Do organizational commitment and social relationships in the workplace make a difference?" *Human Resource Development Quarterly* 16 (2):213-34.

Mann, F.C. 1957. "Studying and creating change: A means to understanding social organization." In *Research in Industrial Human Relation*, ed. C. M. Arensberg. New York: Harper.

Martin, A. J., E. S. Jones, and V. J. Callan. 2005. "The role of psychological climate in facilitating employee adjustment during organizational change." *European Journal Of Work And Organizational Psychology* 14 (3):263-89.

Mazmanian, D., and Paul A. Sabatier. 1989. *Implementation and Public Policy*. Landham, MD: University Press of America.

McCartt, Anne T., and John Rohrbaugh. 1995. "Managerial openness to change and the introduction of GDSS: Explaining initial success and failure in decision conferencing." *Organization Science* 6 (5):569.

McDonald, T., and M. Siegall. 1992. "The effects of technological self-efficacy and job focus on job performance, attitudes, and withdrawal behaviors." *Journal of Psychology* 126 (5):465-75.

———. 1993. "Enhance self-efficacy." *Training & Development* 47 (7):66-7.

———. 1996. "Enhancing worker self-efficacy: An approach for reducing negative reactions to technological change." *Journal of Managerial Psychology* 11:41-4.

McGuire, W.J. 1985. "Attitudes and attitude change." In *The Handbook of Social Psychology*, ed. G. Lindzey and E. Aronson. New York: Random House.

McNabb, David E., and F. Thomas Sepic. 1995. "Culture, climate, and total quality management: Measuring readiness for change." *Public Productivity and Management Review* 18 (4):369-85.

Meyer, J. P., T. E. Becker, and C. Vandenberghe. 2004. "Employee commitment and motivation: a conceptual analysis and integrative model." *Journal of Applied Psychology* 89 (6):991-1007.

Miller, G.A. 1967. "Professionals in bureaucracy: Alienation among industrial scientists and engineers." *American Sociological Review* 32:755-68.

Miller, V.D., J.R. Johnson, and J. Grau. 1994. "Antecedents to willingness to participate in a planned organizational change." *Journal of Applied Communication Research* 22:59-80.

Milton, Marvin H. 1995. "The importance of civil engineering leadership in the government sector." *Journal of Management in Engineering* 11 (5):12-7.

Milward, Brinton H. 1994. "Implications of contracting out: New roles for the hollow state." In *New Paradigms for Government: Issues for the Changing Public Service*, ed. P. Ingraham and B. S. Romzek. San Francisco, CA: Jossey-Bass.

Milward, Brinton H., and Keith G. Provan. 2000. "Governing the hollow state." *Journal of Public Administration Research and Theory* 10 (2):359-79.

Milward, Brinton H., Keith G. Provan, and Barbara A. Else. 1993. "What does the hollow state look like?" In *Public Management: The State of the Art*, ed. B. Bozeman. San Francisco, CA: Jossey-Bass.

Mintzberg, Henry. 1973. *The Nature of Managerial Work*. New York: Harper and Row.

Miranda, Rowan, and Allen Lerner. 1995. "Bureaucracy, organizational redundancy, and the privatization of public services." *Public Administration Review* 55 (2):193-200.

Moon, M. J. 1999. "The pursuit of managerial entrepreneurship: Does organization matter?" *Public Administration Review* 59 (1):31-43.

Morera, O. F., T. P. Johnson, S. Freels, J. Parsons, K. S. Crittenden, B. R. Flay, and R. B. Warnecke. 1998. "The measure of stage of readiness to change: Some psychometric considerations." *Psychological Assessment* 10 (2):182-6.

Morgan, David R. 1992. "The pitfalls of privatization: Contracting without competition." *American Review of Privatization* 22 (4):251-69.

Morgan, David R., and Robert E. England. 1988. "The two faces of privatization." *Public Administration Review* 48 (6):979-86.

Morrison, R.F., and T.M. Brantner. 1992. "What enhances or inhibits learning a new job: A basic career issue." *Journal of Applied Psychology* 77 (6):926-40.

Mosher, Frederick. 1968. "The professional state." In *Democracy and the Public Service*, ed. F. Mosher. London: Oxford University Press.

Mowday, R. T., R. M. Steers, and L. W. Porter. 1979. "The measurement of organizational commitment." *Journal of Vocational Behavior* 14 (2):224-47.

Moynihan, D. A., and S. K. Pandey. 2005. "Testing how management matters in an era of government by performance management." *Journal of Public Administration Research and Theory* 15 (3):421-39.

Mueller, David. 1989. *Public Choice II*. Cambridge: Cambridge University Press.

Myers, R.H. 1990. *Classical and Modern Regression with Applications*. 2nd ed. Boston: PWS-Kent.

Naff, Katherine C. 1991. "Labor-management relations and privatization: A Federal perspective." *Public Administration Review* 51 (1):23-30.

Nagle, J. F. 1992. *A History of Government Contracting*. Washington, DC: George Washington University Press.

National Academy of Public Management. 1989. *Privatization: The Challenge to Public Management*. Washington, DC: National Academy of Public Administration.

Nelson, A., C.L. Cooper, and P.R. Jackson. 1995. "Uncertainty amidst change: The impact of privatization on employee job satisfaction and well-being." *Journal of Occupational and Organizational Psychology* 68 (1):57-71.

Nice, David C., and Patricia Frederickson. 1995. *The Politics of Intergovernmental Relations*. 2nd. ed. Chicago, IL: Nelson-Hall.

Nigro, Lloyd G. and J. E. Kellough (2000). “Civil service reform in Georgia,” *Review of Public Personnel Administration*, 20 (4): 41-54.

Niskanen, William A. 1971. *Bureaucracy and Representative Government*. Chicago: Aldine Atherton.

Nunnally, J.C. 1978. *Psychometric Theory*. 2nd ed. New York: McGraw-Hill.

O'Connell, B.J., H. Holzman, and B.R. Armandi. 1986. "Police cynicism and the modes of adaptation." *Journal of Police Science and Administration* 14 (4):307-13.

O'Leary, Rosemary. 1996. "Managing contracts and grants." In *The Handbook of Public Administration*, ed. J. Perry. San Francisco, CA: Jossey-Bass.

O'Leary, Rosemary, and Tracey Yandle. 2000. "Environmental management at the millennium: The use of environmental dispute resolution by state governments." *Journal of Public Administration Research and Theory* 10 (1):137-55.

O'Looney, J. A. 1998. *Outsourcing State and Local Government Services*. Westport, CT: Quorum Books.

O'Toole, Laurence J. 1996. "Implementing public programs." In *Handbook of Public Administration*, ed. J. L. Perry. San Francisco, CA: Jossey-Bass.

Odusami, K. T. 2002. "Perceptions of construction professionals concerning important skills of effective project leaders." *Journal of Management in Engineering* 18 (2):61-8.

Oreg, S. 2003. "Resistance to change: Developing an individual differences measure." *Journal of Applied Psychology* 88 (4):680-93.

Organization for Economic Cooperation and Development. 1998. "Contracting Out Government Services: Best Practice Guidelines and Case Studies." ed. Public Management Occasional Papers No. 20. Paris: OECD.

Osborne, David, and Ted Gaebler. 1992. *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector*. New York: Plume.

Ostrom, Elinor, and Vincent Ostrom. 1977. "Public goods and public choices." In *Alternatives for Delivering Public Services*, ed. E. S. Savas. Boulder, CO: Westview Press.

Ozer, E. M., and A. Bandura. 1990. "Mechanisms governing empowerment effects - A self-efficacy analysis." *Journal of Personality and Social Psychology* 58 (3):472-86.

Pack, Janet Rothenberg. 1987. "Privatization of public-sector services in theory and practice." *Journal of Policy Analysis and Management* 6 (4):523-40.

———. 1989. "Privatization and cost reduction." *Policy Sciences* 22 (1):1-25.

———. 1991. "The opportunities and constraints of privatization." In *Privatization and Its Alternatives*, ed. W. T. G. Jr. Madison: University of Wisconsin Press.

Paglis, L. L., and S. G. Green. 2002. "Leadership self-efficacy and managers' motivation for leading change." *Journal of Organizational Behavior* 23 (2):215-35.

Panet, P. D., and M. J. Trebilcock. 1998. "Contracting-out social services." *Canadian Public Administration* 41:21-50.

Pattenaude, Richard L., and Larry M. Landis. 1979. "Consultants and technology transfer in the public sector." *Public Administration Review* 39 (5).

Peat, Barbara, and Dan L. Costley. 2001. "Effective contracting for social services." *Nonprofit Management and Leadership* 12 (1):55-74.

Perry, J. L., and L. R. Wise. 1990. "The motivational bases of public-service." *Public Administration Review* 50 (3):367-73.

Perry, James L. 1996. "Measuring public service motivation: An assessment of construct reliability and validity." *Journal of Public Administration Research and Theory* 6 (1):5-22.

———. 2000. "Bringing society in: Toward a theory of public-service motivation." *Journal of Public Administration Research and Theory* 10 (2):471-89.

Peters, B. Guy. 1993. "Managing the hollow state." In *Managing Public Organizations: Lessons from Contemporary European Experience*, ed. K. A. Eliassen and J. Kooiman. London: Sage.

Petty, R.E., and J.T. Cacioppo. 1986. *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*. New York: Springer-Verlag.

Pierce, J. L., M. P. O'Driscoll, and A. M. Coghlan. 2004. "Work environment structure and psychological ownership: The mediating effects of control." *Journal of Social Psychology* 144 (5):507-34.

Podsakoff, P.M., and D.W. Organ. 1986. "Self-reports in organizational research: Problems and prospects." *Journal of Management* 12:531-44.

Poole, R. W., and P. E. Fixler. 1987. "Privatization of public-sector services in practice: Experience and potential." *Journal of Policy Analysis and Management* 6:612-25.

Porters, L.W., R.M. Steers, R.T. Mowday, and P. Boulian. 1974. "Organizational commitment, job satisfaction, and turnover among psychiatric technicians." *Journal of Applied Psychology* 59:603-9.

Prager, Jonas. 1994. "Contracting out government services: Lessons from the private sector." *Public Administration Review* 54 (2):176-84.

President's Commission on Privatization. 1988. *Privatization: Towards More Effective Government*. Washington, DC: President's Commission on Privatization.

Pressman, J. L., and A. Wildavsky. 1973. *Implementation: How Great Expectations in Washington are Dashed in Oakland: or Why It's Amazing the Federal Programs Work at All*. Berkeley, CA: University of California Press.

Prochaska, J.O., C.A. Redding, and K. Evers. 1997. "The transtheoretical model of change." In *Health Behavior and Health Education: Theory, Research, and Practice*, ed. K. Glanz, F. M. Lewis and B. K. Rimer. San Francisco: Jossey-Bass.

Rafferty, Alannah, and Roland Simons. 2006. "An examination of the antecedents of readiness for fine-tuning and corporation transformation changes." *Journal of Business & Psychology* 20 (3):325-50.

Rainey, Hal G. 2004. "Big science, big bureaucracy, and privatization." *Public Performance & Management Review* 28 (2):214-36.

Regoli, B., R.G. Culbertson, and J.P. Crank. 1991. "Using composite measures in police cynicism research: An application of canonical factor regression." *Journal of Quantitative Criminology* 7 (1):41-58.

Rehfuss, J. A. 1989. *Contracting Out in Government: A Guide to Working with Outside Contractors to Supply Public Services*. San Francisco: Jossey-Bass.

Rehfuss, John A. 1979. "Managing the consultanship process." *Public Administration Review* 39 (3):211-5.

Reichers, Arnon E., John P. Wanous, and James T. Austin. 1997. "Understanding and managing cynicism about organizational change." *Academy of Management Executive* 11 (1):48-59.

Reisel, W. D. 2003. "Validation and measurement of perceived environmental threat as an antecedent to job insecurity." *Psychological Reports* 93 (2):359-64.

Renn, R. W., and D. B. Fedor. 2001. "Development and field test of a feedback seeking, self-efficacy, and goal setting model of work performance." *Journal of Management* 27 (5):563-83.

Rimmer, S. J. 1998. "Competitive tendering and outsourcing: Initiatives and methods." *Australian Journal of Public Administration* 57:75-84.

Romzek, Barbara S. 1990. "Employee investment and commitment: The ties that bind." *Public Administration Review* 50 (3):374-83.

———. 1996. "Enhancing accountability." In *Handbook of Public Administration*, ed. J. L. Perry. San Francisco, CA: Jossey-Bass.

———. 1998. "Where the buck stops: Accountability in reformed public organizations." In *Transforming Government: The Realities of Managing Change in Public Organizations*, ed. P. W. Ingraham, R. P. Sanders and J. Thompson. San Francisco, CA: Jossey-Bass.

Romzek, Barbara S., and Melvin J. Dubnick. 1998. "Accountability." In *International Encyclopedia of Public Policy and Administration*, ed. J. M. Shafritz: Westview Press.

Romzek, Barbara S., and Jocelyn M. Johnston. 2002. "Effective contract implementation and management: A preliminary model." *Journal of Public Administration Research and Theory* 12 (3):423-53.

Rousseau, D. M., and S.A. Tijoriwala. 1999. "What's a good reason to change? Motivated reasoning and social accounts in promoting organizational change." *Journal of Applied Psychology* 84 (4):514-28.

Sagie, A., and M. Koslowsky. 1994. "Organisational attitudes and behaviors as a function of participation in strategic and tactical change decisions: An application of path-goal theory." *Journal of Organizational Behavior* 15:37-47.

———. 1996. "Decision type, organisational control, and acceptance of change: An integrative approach to participative decision making." *Applied Psychology-An International Review-Psychologie Appliquee-Revue Internationale* 45 (1):85-92.

Salamon, L. M. 2002. "The new governance and the tools of public action: An introduction." In *The Tools of Government: A Guide to the New Governance*, ed. L. M. Salamon and O. V. Elliott. Oxford: Oxford University Press.

Salamon, Lester M. 1989. *Beyond Privatization: The Tools of Government Action*. Washington, DC: The Urban Institute.

Sargent, L. D., and D. J. Terry. 1998. "The effects of work control and job demands on employee adjustment and work performance." *Journal of Occupational and Organizational Psychology* 71:219-36.

Savas, E. S. 1982. *Privatizing the Public Sector: How to Shrink Government*. Chatham, NJ: Chatham House Publishers.

———. 1987. *Privatization: The Key to Better Government*. Chatham, NJ: Chatham House.

———. 2000. *Privatization and Public-Private Partnerships*. Chatham, NJ: Chatham House.

Schein. 1980. *Organizational Psychology*. 3rd ed. Englewood Cliffs, NJ: Prentice-Hall.

Schlesinger, Mark, Robert Dorward, and Richard Pulice. 1986. "Competitive bidding and states' purchase of services: The case of mental health care in Massachusetts." *Journal of Policy Analysis and Management* 5 (2):245-63.

Schmidt, H. 2003. "Rethinking the policy of contracting out social services to non-governmental organizations." *Public Management Review* 5 (3):307-23.

Schneider, B., A.P. Brief, and R.A. Guzzo. 1996. "Creating a climate and culture for sustainable organizational change." *Organizational Dynamics* 24 (4):7-19.

Schyns, Birgit. 2004. "The influence of occupational self-efficacy on the relationship of leadership behavior and preparedness for occupational change." *Journal of Career Development* 30 (4):247-61.

Sclar, Elliot. 2000. *You Don't Always Get What You Pay For: The Economics of Privatization*. Ithaca, NY: Cornell University Press.

Seibert, S. E., S. R. Silver, and W. A. Randolph. 2004. "Taking empowerment to the next level: A multiple-level model of empowerment, performance, and satisfaction." *Academy Of Management Journal* 47 (3):332-49.

Seidenstat, Paul, ed. 1999. *Contracting Out Government Services*. Westport, CT: Praeger Publishers.

Seitzinger, Michael V. 1993. "Competition in Federal Public Contracting." Washington, DC: Congressional Research Service.

Sharkansky, I. 1989. "Policy making and service delivery on the margins of government: The case of contractors." In *Services for Sale: Purchasing Health and Human Services*. New Brunswick, NJ: Rutgers University Press.

Shaw, J. B., M. W. Fields, J. W. Thacker, and C. D. Fisher. 1993. "The availability of personal and external coping resources - Their impact on job stress and employee attitudes during organizational restructuring." *Work and Stress* 7 (3):229-46.

Siders, M. A., G. George, and R. Dharwadkar. 2001. "The relationship of internal and external commitment foci to objective job performance measures." *Academy Of Management Journal* 44 (3):570-9.

Simon, Herbert A., Donald W. Smithburg, and Victor A. Thompson. 1950. *Public Administration*. New York: Knopf.

Sinha, S. P., T. Talwar, and R. Rajpal. 2002. "Correlational study of organizational commitment, self-efficacy and psychological barriers to technological change." *Psychologia* 45 (3):176-83.

Smith, Ian. 2005. "Achieving readiness for organisational change." *Library Management* 26 (6/7):408.

Smith, Steven Rathgeb, and Michael Lipsky. 1993. *Non-profits for Hire: The Welfare State in the Age of Contracting*. Cambridge, MA: Harvard University Press.

Sorensen, J. B. 2000. "The longitudinal effects of group tenure composition on turnover." *American Sociological Review* 65 (2):298-310.

Sorensen, James E., and Thomas L. Sorensen. 1974. "The conflict of professionals in bureaucratic organizations " *Administrative Science Quarterly* 19 (1):98-106.

Spector, Paul E. 1992. *Summated Rating Scale Construction: An Introduction*. Newbury Park, CA: Sage Publications.

Spors, K.K., and J.J. Fialka. 2002. "Filling a public-service void: Federal workforce faces retirement bubble, personnel shortfall." *Wall Street Journal*, September 19, 2002, A4.

Stanley, D.J., J.P. Meyer, and L. Topolnytsky. 2005. "Employee cynicism and resistance to organizational change." *Journal of Business and Psychology* 19 (4):429-59.

Steel, R. P., and J. R. Van Scotter. 2003. "The organizational performance cycle: Longitudinal assessment of key factors." *Journal of Business and Psychology* 18 (1):31-50.

Steiner, Carol. 2001. "A role for individuality and mystery in “managing” change." *Journal of Organizational Change Management* 14 (2):150-67.

Stevens, J. 1996. *Applied Multivariate Statistics for the Social Sciences*. 3rd ed. Mahwah, NJ: Erlbaum.

Strebel, P. 1996. "Why do employees resist change?" *Harvard Business Review* 74 (3):86.

Stumpf, S.A., A.P. Brief, and K. Hartman. 1987. "Self-efficacy expectations and coping with career-related events." *Journal of Vocational Behavior* 31 (1):91-108.

Sullivan, H. J. 1987. "Privatization of public services: A growing threat to constitutional rights." *Public Administration Review* 47 (6):461-7.

Swanlund, Mark. 2000. "Enhancing pavement smoothness." *Public Roads* 64 (2).

Tabachnick, Barbara, and Linda Fidell. 1996. *Using Multivariate Statistics*. 3rd ed. New York: Harper Collins.

Telch, M.J., A. Bandura, P. Vinciguerra, A. Agras, and A.L. Stout. 1982. "Social demand for consistency and congruence between self-efficacy and performance." *Behavior Therapy* 13 (5):694-701.

Terry, D. J., and N. L. Jimmieson. 2003. "A stress and coping approach to organisational change: Evidence from three field studies." *Australian Psychologist* 38 (2):92-101.

Thompson, J. A., and A. H. Van de Ven. 2002. "Commitment shift during organizational upheaval: Physicians' transitions from private practitioner to employee." *Journal of Vocational Behavior* 60 (3):382-404.

Thompson, Richard C., Kurt M. Joseph, Lawrence L. Bailey, Jody A. Worley, and Clara A. Williams. 2000. "Organizational change: An assessment of trust and cynicism." ed. U. S. D. o. Transportation. Washington, D.C.

Tiebout, Charles. 1956. "A pure theory of local expenditures." *Journal of Political Economy* 64:416-24.

Transportation Research Board. 2003. "Recruiting and Retaining Individuals in State Transportation Agencies: A Synthesis of Practice." In *National Cooperative Highway Research Program*. Washington, DC: Transportation Research Board.

———. 2005. "Critical Issues in Transportation." Washington, DC: The National Academies.

Tullock, Gordon. 1971. "Public decisions as public goods." *Journal of Political Economy* 79:913-8.

U.S. Census Bureau. 2004a. "Five Georgia Counties Among the Top-10 Growing Counties." In *Press Release*. Washington, DC: U.S. Census Bureau.

———. 2004b. "Nation Adds 3 Million People in Last Year." In *Press Release*, ed. U. S. C. 2004. Washington, DC: U.S. Census Bureau.

U.S. Department of Defense. 1996. "Report of the Defense Science Board on Outsourcing and Privatization." ed. Office of the Under Secretary of Defense for Acquisition and Technology. Washington, DC: U.S. Department of Defense.

U.S. Department of Labor. 1989. *The Long-Term Employment Implications of Privatization*. Washington, DC: National Commission on Employment Policy.

U.S. General Accountability Office. 2004. "Contract Management: Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight." ed. U. S. Senate. Washington, DC: U.S. General Accountability Office.

———. 2005. "Contract Management: The Air Force Should Improve How It Purchases AWACS Spare Parts." ed. Report to the Secretary of Defense. Washington, DC: U.S. General Accountability Office.

U.S. General Accounting Office. 1991. "Government Contractors: Are Service Contractors Performing Inherently Government Functions?" Washington, DC: GAO.

———. 1995a. "Government Contractors: An Overview of the Federal Contracting Out Program." ed. Testimony before the Subcommittee on Civil Service - Committee on Government Reform and Oversight - House of Representatives. Washington, DC: U.S. General Accounting Office.

———. 1995b. "States and Localities Move to Privatized Services." Washington, DC: U.S. General Accounting Office.

———. 1996. "Army Depot Maintenance: Privatization Without Further Downsizing Increases Costly Excess Capacity." ed. Report to Congressional Requesters. Washington, DC: U.S. General Accounting Office.

———. 1997a. "Privatization: Lessons Learned by State and Local Governments." ed. Report to the Chairman House Republic Task Force on Privatization. Washington, DC: U.S. General Accounting Office.

———. 1997b. "Terms Related to Privatization Activities and Processes." Washington, DC: U.S. General Accounting Office.

———. 2001a. "Contract Management: No DoD Proposal to Improve Contract Service Costs Reporting." ed. Report to Congressional Committees. Washington, DC: U.S. General Accounting Office.

———. 2001b. "Federal Employee Retirements: Expected Increase Over the Next 5 Years Illustrates Need for Workforce Planning." Washington, DC: GAO.

———. 2005. "Federal-Aid Highways: FHWA Needs a Comprehensive Approach to Improving Project Oversight." Washington, DC: U.S. General Accounting Office.

U.S. Government Accountability Office. 2005a. "Contract Management: Opportunities to Improve Surveillance on Department of Defense Service Contracts." Washington, DC: U.S. General Accountability Office.

———. 2005b. "Department of Energy: Further Actions Are Needed to Strengthen Contract Management for Major Projects." Washington, DC.

Van de Ven, Andrew H., and M. Scott Poole. 1995. "Explaining development and change in organizations." *Academy of Management Review* 20 (3):510-40.

Van Slyke, D. M., and C. A. Hammonds. 2003a. "The privatization decision: Do public managers make a difference?" *American Review of Public Administration* 33 (2):146-63.

———. 2003b. "The privatization decision: Do public managers make a difference?" *The American Review of Public Administration* 33 (2):146-63.

Van Slyke, David M. 2003. "The mythology of privatization in contracting for social services." *Public Administration Review* 63 (3):296-315.

Van Wart, M. 2003. "Public sector leadership theory: An assessment." *Public Administration Review* 63:214-28.

Walker, R. M., and G. Enticott. 2004. "Using multiple informants in public administration: Revisiting the managerial values and actions debate." *Journal of Public Administration Research and Theory* 14 (3):417-34.

Wallin, Bruce A. 1997. "The need for a privatization process: Lessons from development and implementation." *Public Administration Review* 57 (1):11-20.

Wanberg, C.R., and J.T. Banas. 2000. "Predictors and outcomes of openness to changes in a reorganizing workplace." *Journal of Applied Psychology* 85 (1):132-42.

Wanous, John P., Arnon E. Reichers, and James T. Austin. 1994.

———. 2000. "Cynicism about organizational change: Measurement, antecedents, and correlates." *Group & Organization Management* 25 (2):132-53.

———. 2004. "Cynicism about organizational change: An attribution process perspective." *Psychological Reports* 94 (3):1421-34.

Warner, M. E. 2000. "Structuring the market for service delivery: A new role for local government." In *Local Government Innovation: Issues and Trends in Privatization and Managed Competition*, ed. R. Johnson and N. Walzer. Westport, CT: Quorum Books.

Warner, M. E., Mike Ballard, and Amir Hefetz. 2003. "Contracting back in - When privatization fails." In *The Municipal Year Book 2003*. Washington, DC: International City County Management Association.

Warner, M. E., and Amir Hefetz. 2002. "The uneven distribution of market solutions for public goods." *Journal of Urban Affairs* 24 (4):445-59.

Warner, Mildred, and Amir Hefetz. 2001. "Privatization and the Market Role of Local Government: Small growth in contracting underscores dominance of service provision by public employees." In *Briefing Paper*. Washington, DC: Economic Policy Institute.

Warren, Charles R., and Leanne R. Aronson. 1981. "Sharing management capacity: Is there a Federal responsibility?" *Public Administration Review* 41 (3):381-7.

Wernstedt, Kris, Peter B. Meyer, and Anna Alberini. 2006. "Attracting private investment to contaminated properties: The value of public interventions." *Journal of Policy Analysis and Management* 25 (2):347-69.

West, Jonathon P. (2002). "Georgia on the mind of radical civil service reformers," *Review of Public Personnel Administration*, 22(2): 79-93.

Whetten, D. 1978. "Coping with incompatible role expectations: An integrated view of role conflict." *Administrative Science Quarterly* 23:254-71.

White, Leroy. 2000. "Changing the "whole system" in the public sector." *Journal of Organizational Change Management* 13 (2):162-77.

Whitfield, D. 1983. *Making it Public: Evidence and Action against Privatization*. London: Pluto Press.

Wise, C. R., T. Sinclair, and E. Amna. 1996. "The capacity of national administrative organizations: A comparison of Sweden and the United States." *Administration & Society* 28 (2):147.

Wise, Charles R. 1990. "Public service configurations and public organizations: Public organization design in the post-privatization era." *Public Administration Review* 50 (2):141-55.

———. 1997. "The future of public law: Beyond administrative law and national borders." In *Handbook of Public Law and Administration*, ed. P. J. Cooper and C. A. Newland. San Francisco, CA: Jossey-Bass.

Witheford, D. K. 1999. *Consultants for DOT Preconstruction Engineering Work*. Washington, DC: National Academy Press.

Wolfe, S.L., C.R. Nordstrom, and K.B. Williams. 1998. "The effect of enhancing self-efficacy prior to job training." *Journal of Social Behavior and Personality* 13 (4):633-50.

Wooten, K. C. 2002. "Resistance and readiness in organizational change - Guest editorial." *Journal of Organizational Change Management* 15 (2):102-4.

Wright, Bradley E. 2003. "Job satisfaction in the public sector." *American Review of Public Administration* 33 (1):70-91.

Young, Ann P. 2000. "“I’m just me”: A study of managerial resistance." *Journal of Organizational Change Management* 13 (4):375-88.

Yousef, D. A. 2000. "Organizational commitment and job satisfaction as predictors of attitudes toward organizational change in a non-western setting." *Personnel Review* 29 (5-6):567-88.

Zangaro, G.A. 2001. "Organizational commitment: A concept analysis." *Nursing Forum* 36 (2):14-22.

Zellner, A. 1962. “An efficient method of estimating seemingly unrelated regression equations and tests for aggregation bias.” *Journal of the American Statistical Association* 57:348-368.

———. 1963. “Estimators for seemingly unrelated regression equations: Some exact finite sample results.” *Journal of the American Statistical Society* 58:977-992.

Zimbardo, P.G., and M.R. Leippe. 1991. *The Psychology of Attitude Change and Social Influence*. Philadelphia: Temple University Press.

Zwick, T. 2002. "Employee resistance against innovations." *International Journal of Manpower* 23 (6):542-52.

VITA

Dara Veronica O'Neil was born in Ireland on February 2, 1972. She holds a Master of Science degree in Public Policy (1999) and a Bachelor of Science degree (*Cum Laude*) in Science, Technology and Culture with certificates in French, International Affairs, and Sociology (1994) from the Georgia Institute of Technology (Georgia Tech) in Atlanta. During her tenure in the School of Public Policy at Georgia Tech, Ms. O'Neil worked for 11 years as a research associate at the Georgia Tech Research Institute in Atlanta, where she conducted sponsored research on the intersections between new information and communication technologies, society, and public policy, with a particular emphasis on evaluation methodologies for measuring socio-technical aspects of these intersections. Prior to her work at Georgia Tech, Ms. O'Neil taught English in South Korea, Taiwan, and Thailand. She is currently employed as a policy analyst at the Georgia Department of Education.